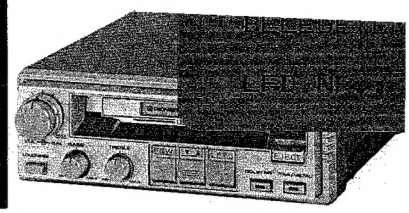
PIONEER®

# Service Manual



ORDER NO.
CRT-312-0

COMPONENT CAR STEREO CASSETTE DECK

# KP-717G E

NOTE:
The cassette mechanism description, refer to the CX-118FV, FV/A Service Manual (CRT-199).

## SPECIFICATIONS

**General**

Power source . . . . . DC14.4V(10.8~15.6V allowable)
Grounding system . . . . . Negative type
Dimensions . . . . . 150(W) x 50(H) x 167(D) mm
Weight . . . . . 1.5kg
Tone controls (bass) . . . . . ±10 dB (100 Hz)
(treble) . . . . . ±10 dB (10 kHz)
Loudness contour . . . . . +12 dB (100 Hz), +4 dB (10 kHz)
(volume: –30 dB)
Maximum output level . . . . . 200mV
Output impedance . . . . . 1kΩ

**Tape Player**

Tape . . . . . Compact cassette tape (C-30~C-90)
Tape speed . . . . . 4.76cm/sec.(+0.19cm/sec.-0.05cm/sec.)
Fast forward/rewind time . . . . . Approx. 100 sec. for C-60
Wow & flutter . . . . . 0.09% (WRMS)
Frequency response . . . . . Metal: 30~18,000 Hz (±3dB)
Normal: 30~15,000 Hz (±3dB)
Stereo separation . . . . . 45 dB
Signal-to-noise ratio . . . . . .
. . . . . Dolby NR IN; 63 dB (IEC-A network)
Dolby NR OUT; 55 dB (IEC-A network)

**Note:**
Specifications and the design are subject to possible modification without notice due to improvements.

**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
**PIONEER ELECTRONICS [USA] INC.** 1925 E. Dominguez St., Long Beach, California 90810 U.S.A.
**PIONEER ELECTRONIC [EUROPE] N.V.** Keetberglaan 1, 2740 Beveren, Belgium
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia

P-717G

# CONTENTS



## CAUTION

**When Handling IC PD2001.**
**Please Observe:**
IC PD2001 (IC402 in the Control Unit) is C-MOS IC of extremely low power consumption and very high input impedance. Unless handled with special care, they could be damaged by static electricity induction. This IC is supplied with a shorting cap (of aluminum foil) attached. When soldering or performing other repair work, always attach this cap as shown below. Remove the cap after the repair has been completed.
Also, this type IC must not be inserted in a polystyrene package for storage.

# 1. PARTS LOCATION

*NOTE*

- *For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.*
  *★ ★: GENERALLY MOVES FASTER THAN ★.*
  *This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*

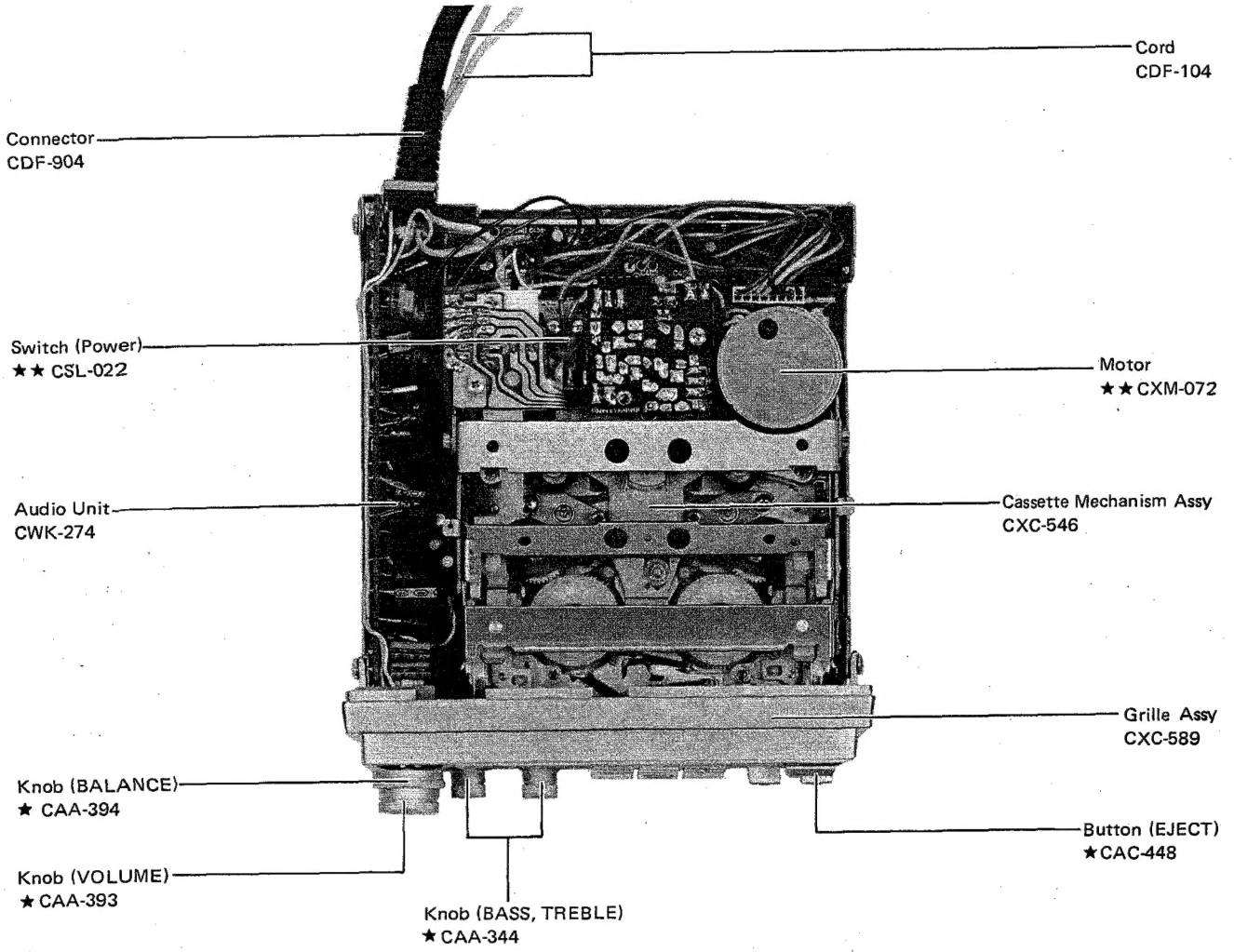



Fig. 1

# 2. CIRCUIT DESCRIPTION

## • Cassette Mechanism Control Circuit

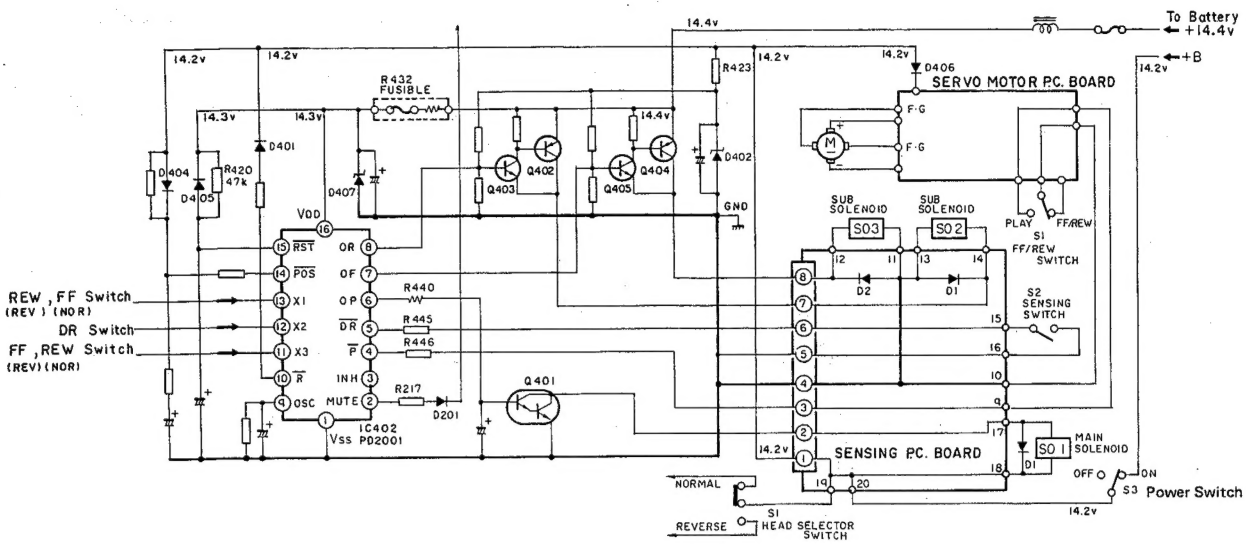



Fig. 2

In this control circuit:

1) Feather touch tape deck controller
PD2001 (16P DIP C-MOS IC)

2) The X1, X3 (REW, FF input) terminals are for both input and output. When a key is pressed, the signal passes through IC401 and, according to the transistor driver and IC403, lights the appropriate LED and, in the case of REW and FF, causes the LED to flash on and off.

3) Direction change operation (Fig. 3)

A CLK OSC is included with terminal 1 and is constantly generating an 80 Hz pulse. This passes through the 5-bit binary counter to control the timing of all operations. When an input from X2 is received, a muting signal is generated and a signal to drive the main solenoid is sent for 150msec from terminal ⑥.

Once operation of the main solenoid has ended, a muting signal is generated for another 200msec to prevent pop noise.

4) Sub-solenoid double-pull circuit (Fig. 4)

When the transport mode is switched from play to FF or REW, a signal is generated from terminals ⑦ and ⑧ and the sub-solenoids are both pulled only when the signal is absorbed. In the FF and REW modes, the sub-solenoid in the input direction is held and the other one moves away.

This double-pull system doubles the sub-solenoid absorption head base stopper release power. That is, the load on the solenoid is lessened so they are stronger with less power.

5) Operation at tape end (Fig. 5)

During FF or REW, when the tape end detection switch S2 (cassette mechanism assembly) momentarily switches on and an input is received at terminal ⑤ ($\overline{DR}$), the sub-solenoids are released. Then, after 50msec, a signal is generated from terminal ⑥ to drive the main solenoid and change the direction of tape travel.

6) Reset terminal

In order to make the rise of reset terminal ⑮ slower than that of $V_{DD}$ terminal ⑯ and assure a rapid drop when power is turned off, an external circuit is provided to be absolutely certain that initial reset is applied.

## X 2 ($\overline{DR}$ CHANGE) INPUT

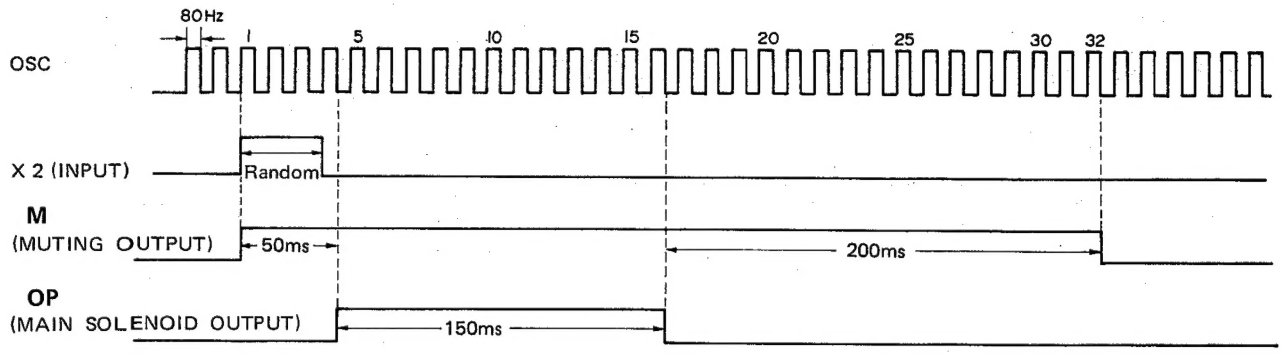



Fig. 3

## X 1 INPUT　　X 3 INPUT

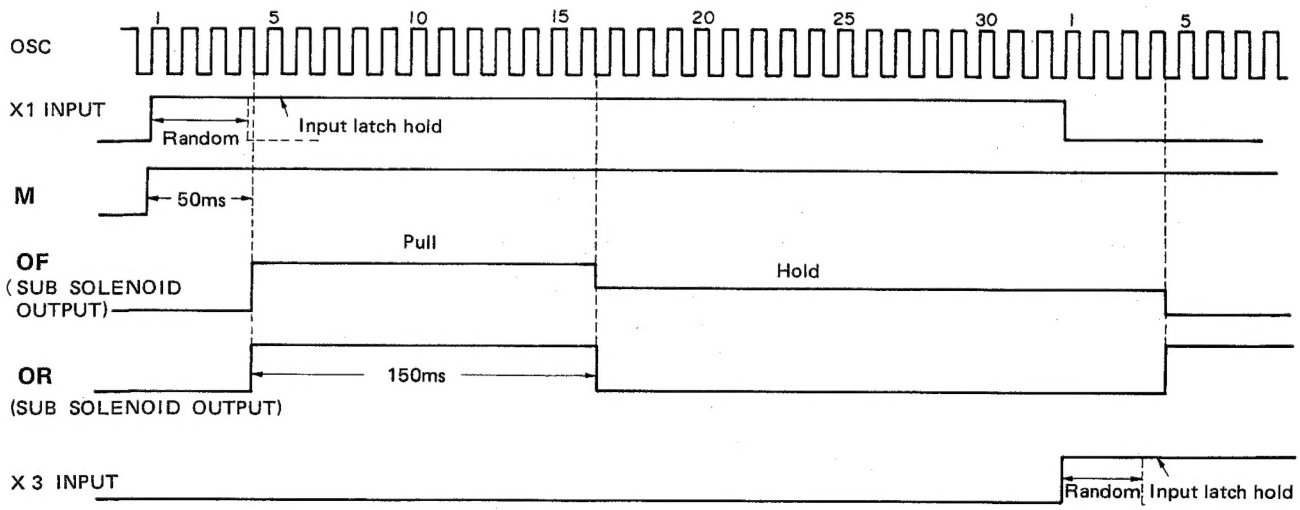



Fig. 4

## $\overline{DR}$ INPUT OPERATION

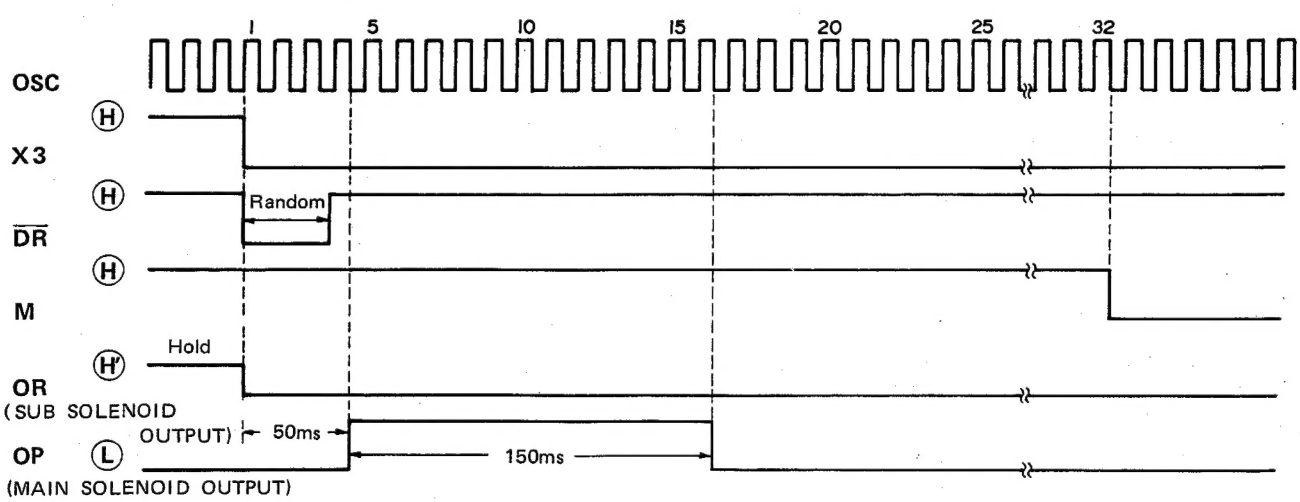



Fig. 5

- **POS (Power OFF Stop) Operation**

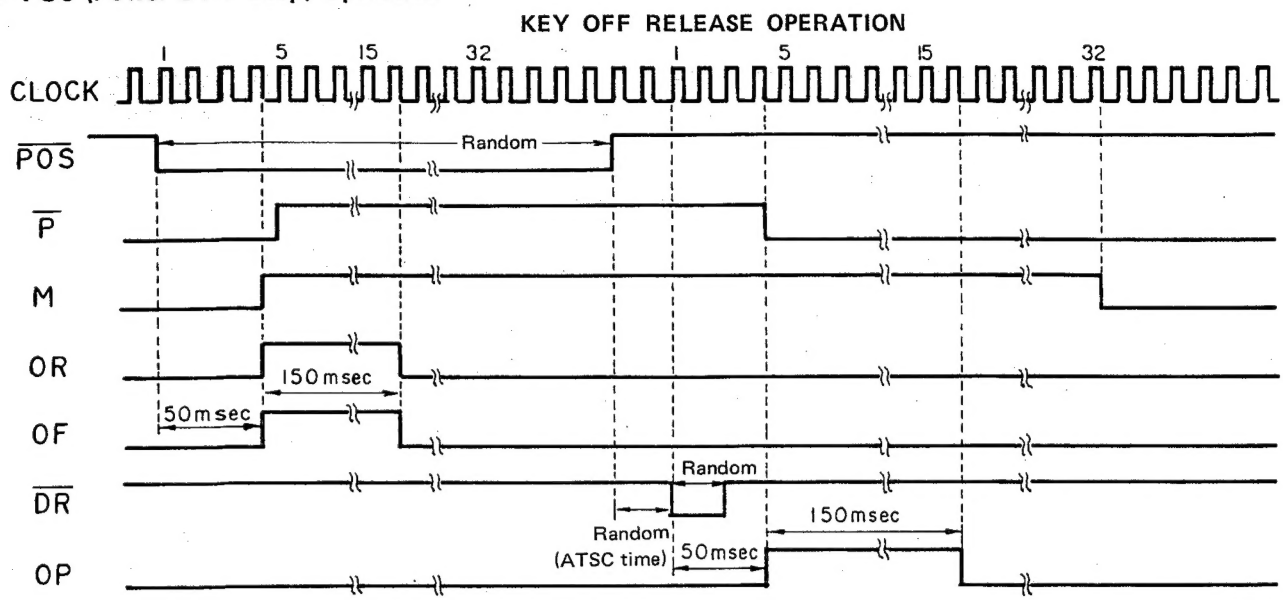



Fig. 6

When the accessory key is turned off, the positive terminal ⑭ of IC402(PD2001) goes to "L" about one second later. A 150msec signal is generated from terminals ⑦ and ⑧ (OF, OR) to drive the sub-solenoids (SO2, SO3) and stop all operations. When POS operations is cancelled, operation begins from automatic tape slack cancel and the play mode is begun.

- **FF/REW Exclusivity Circuit**

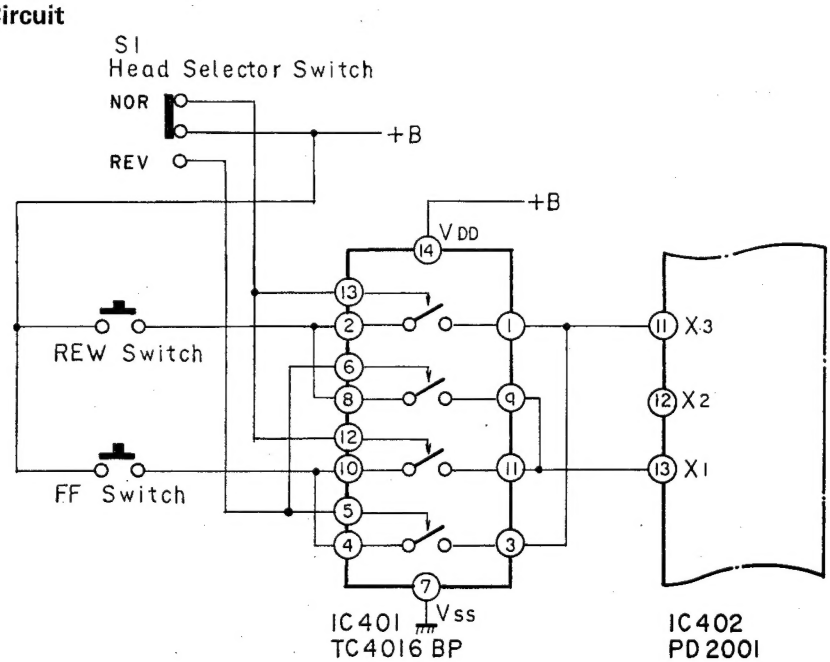
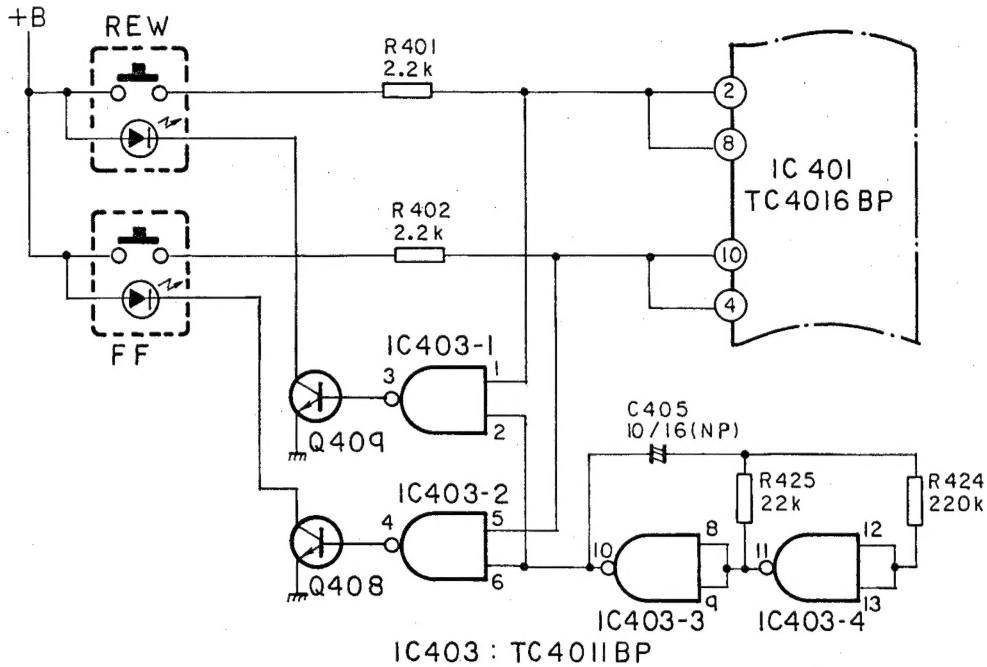



Fig. 7

This circuit permits FF and REW operation when either button is pressed in the normal or reverse modes. In the normal mode, terminals ⑫ and ⑬ of IC401 (TC4016BP) go to "H", the electronic switches between ⑩ and ⑪ and ① and ② turn on and the electronic switches between ③and④and⑧and⑨turn off.

As a result, the signal generated when the FF button is pressed goes to terminal ⑬ (X1) of IC402 and the signal generated when the REW button is pressed goes to terminal ⑪ (X3). In the reverse mode, the FF signal goes to terminal ⑪ (X3) of IC402 and the REW signal to terminal ⑬ (X1), a different transmission path than the normal mode.

## • FF/REW LED Circuit




Oscillation cycle T ≒ 2.2 x (R425) x (C405)

Fig. 8

This circuit lights the FF or REW LED when one of those buttons is pressed during the play mode or causes the FF or REW LED to flash on and off during the normal FF or REW mode.

During the play mode, terminals ① and ⑤ of IC403 (TC4011BP) are "L" so terminals③and④are "H". The FF or REW LED lights because Q408 or Q409 goes on.

When the FF button is pressed, terminal ⑤of IC403 goes to "H". An output synchronized with the oscillation of the inside of IC403 (the two gates IC403-3 and IC403-4) and C405, R425 goes to Q408 from terminal④and causes the FF LED to flash on and off. When the REW button is pressed, terminal ① of IC403 goes to "H". An output synchronized with the inside of IC403 (the two gates IC403-3 and IC403-4) and C405, R425 goes to Q409 from terminal③and causes the REW LED to flash on and off.

# 3. BLOCK DIAGRAM

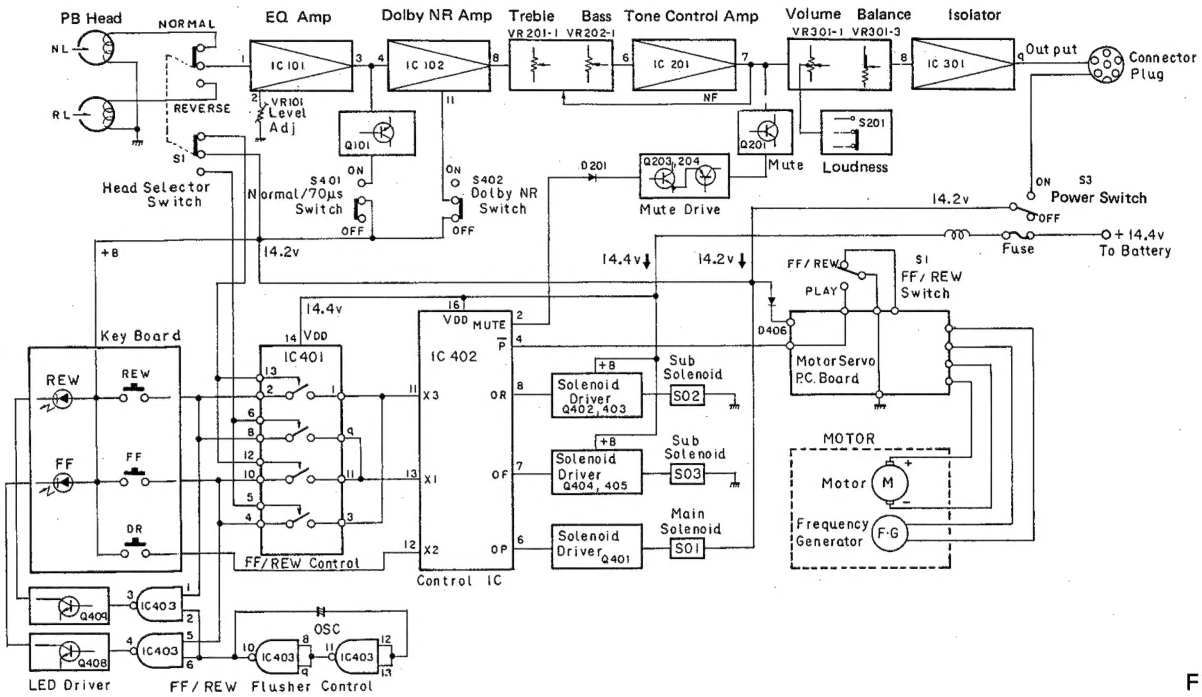



Fig. 9

# 4. LEVEL DIAGRAM

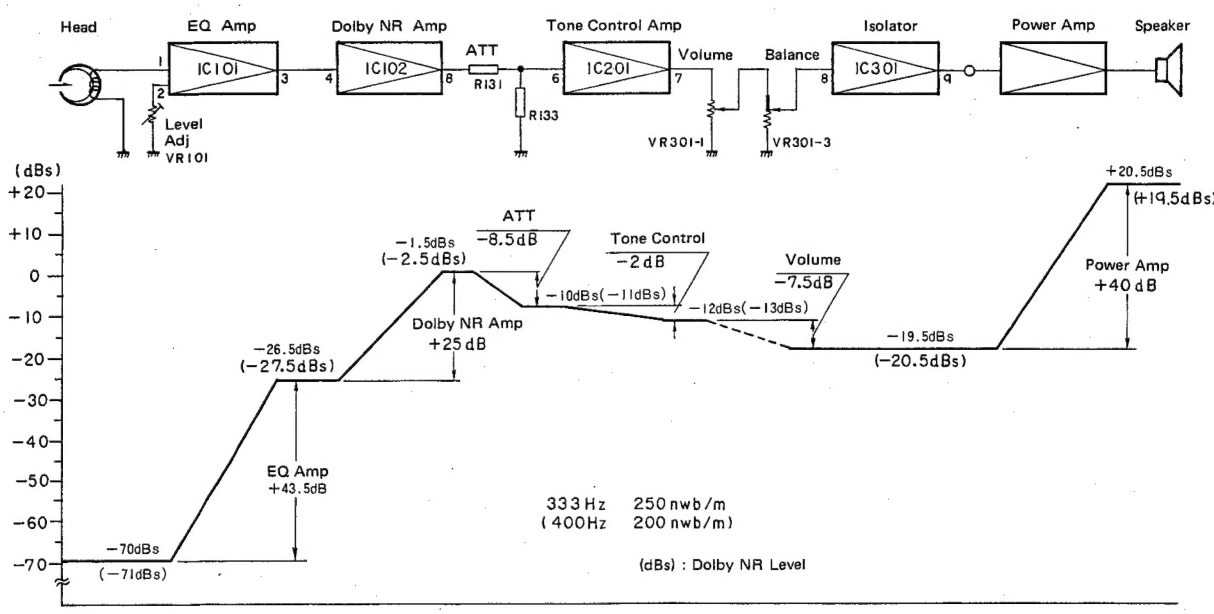



Fig. 10

# 5. ADJUSTMENT

## 5. 1 DOLBY NR LEVEL ADJUSTMENT

- **Connection Diagram**

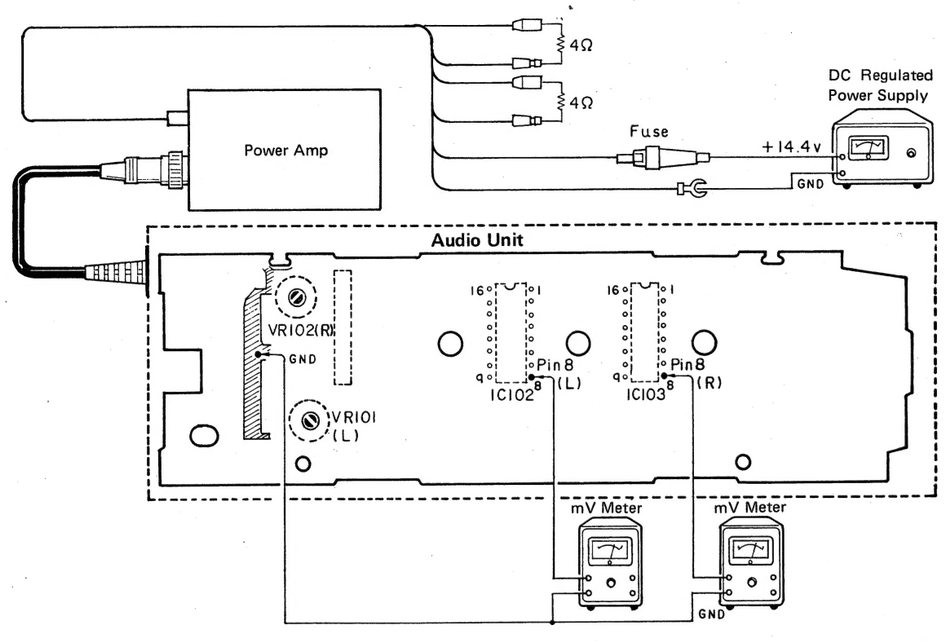



Fig. 11

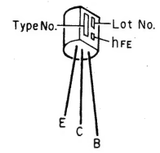
- **To Adjust**

1. Playback the CT-150 (400 Hz, 200nwb/m) test tape, and adjust VR101 (Lch) and VR102 (Rch) so that the mV meters read 580mV (—2.5dBs).

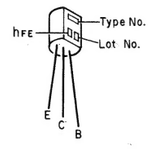


- **IC's and Transistors**

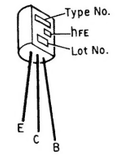
2SC1815
2SC945



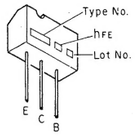

2SC1740LN



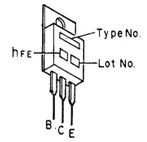

2SD468
2SD667




2SA937F
2SC2021F
2SC1652F

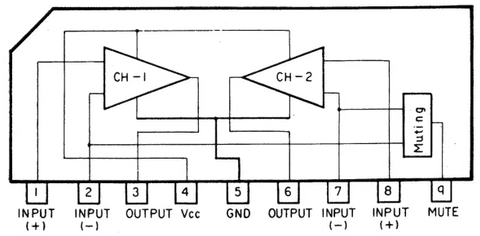



2SD1276
2SB941

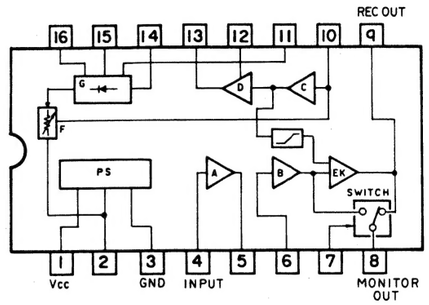



- **Audio Unit**

IC101:TA7325P



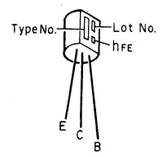

IC102,103:TA7629P



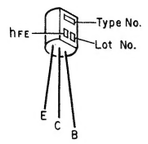

IC301:KHA102

## • IC's and Transistors

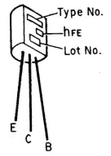
2SC1815
2SC945



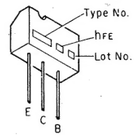

2SC1740LN



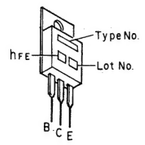

2SD468
2SD667




2SA937F
2SC2021F
2SC1652F

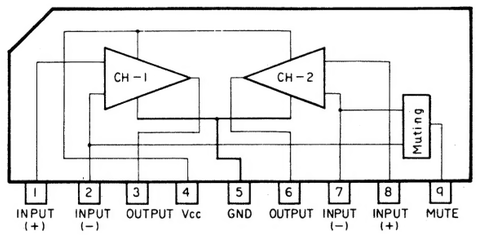



2SD1276
2SB941

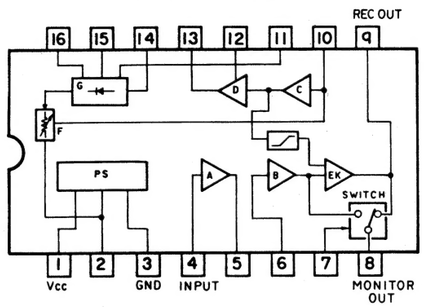



## • Audio Unit

IC101:TA7325P




IC102,103:TA7629P




IC301:KHA102

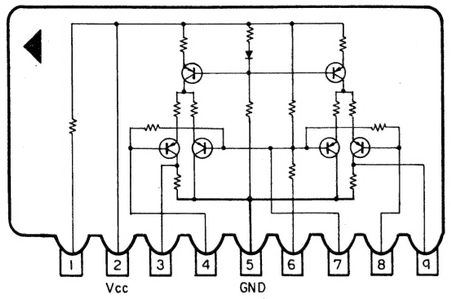
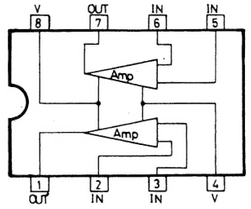


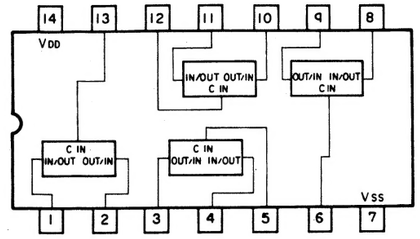

Fig. 11

## • Control Unit

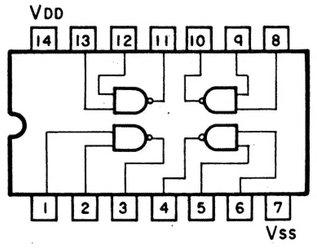
IC201:TA75558P



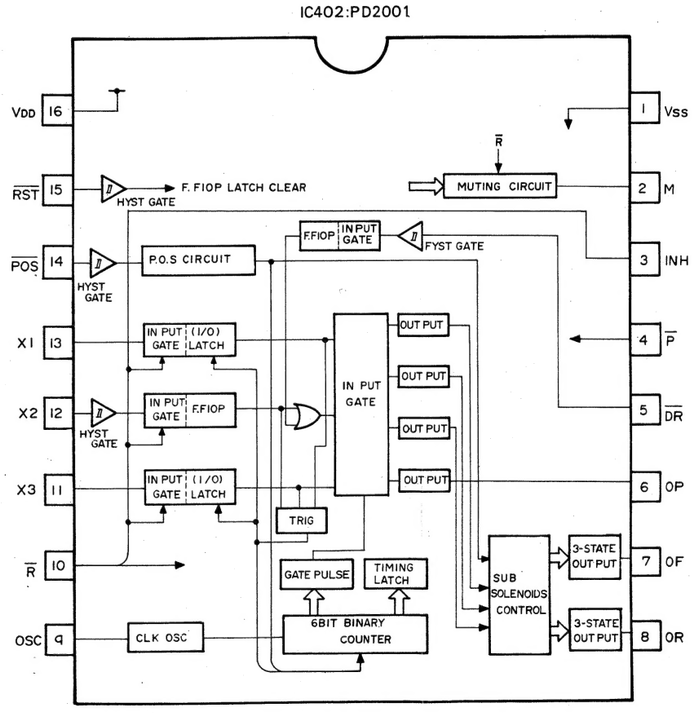

IC401:TC4016BP



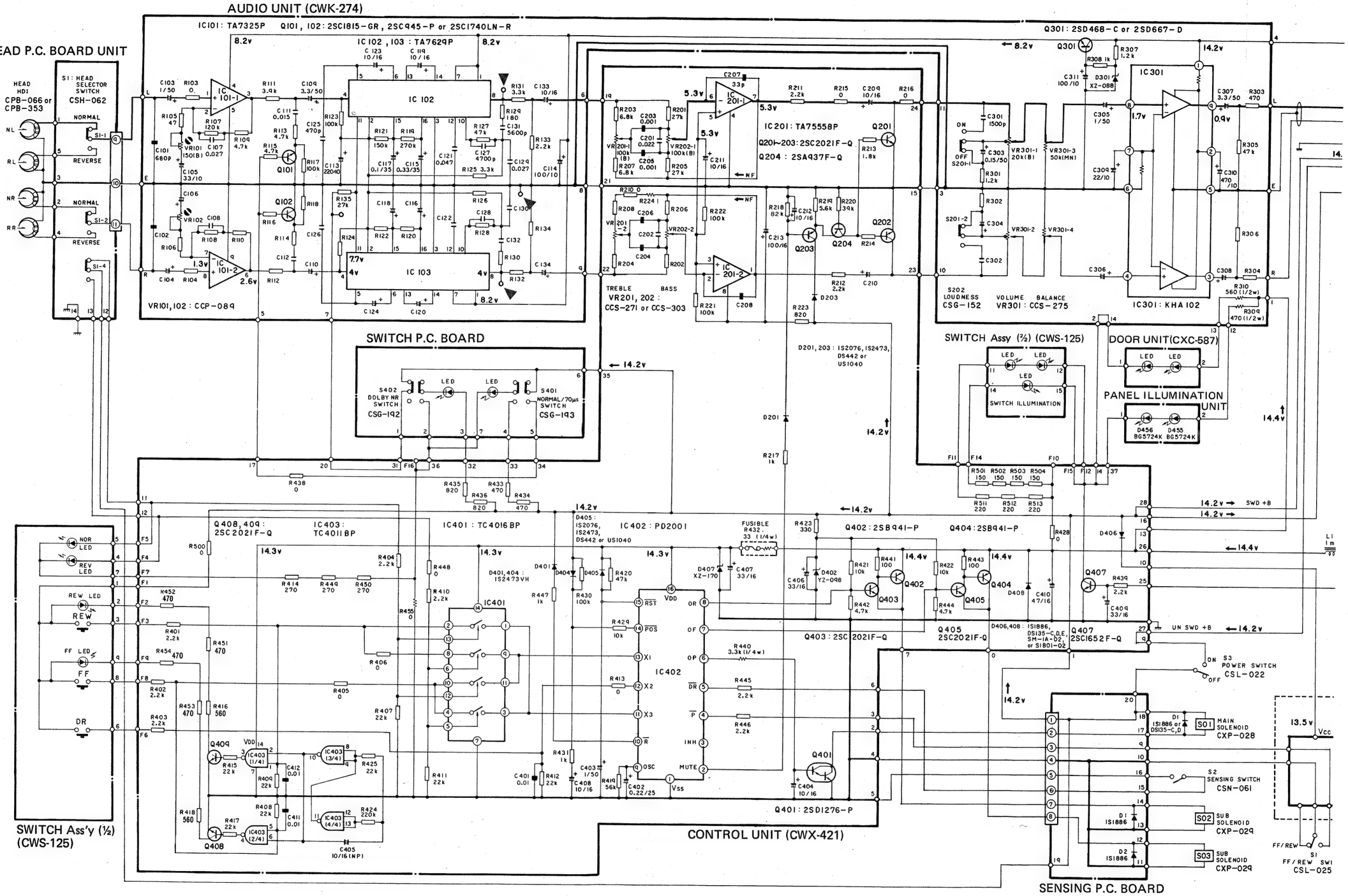

IC403:TC4011BP

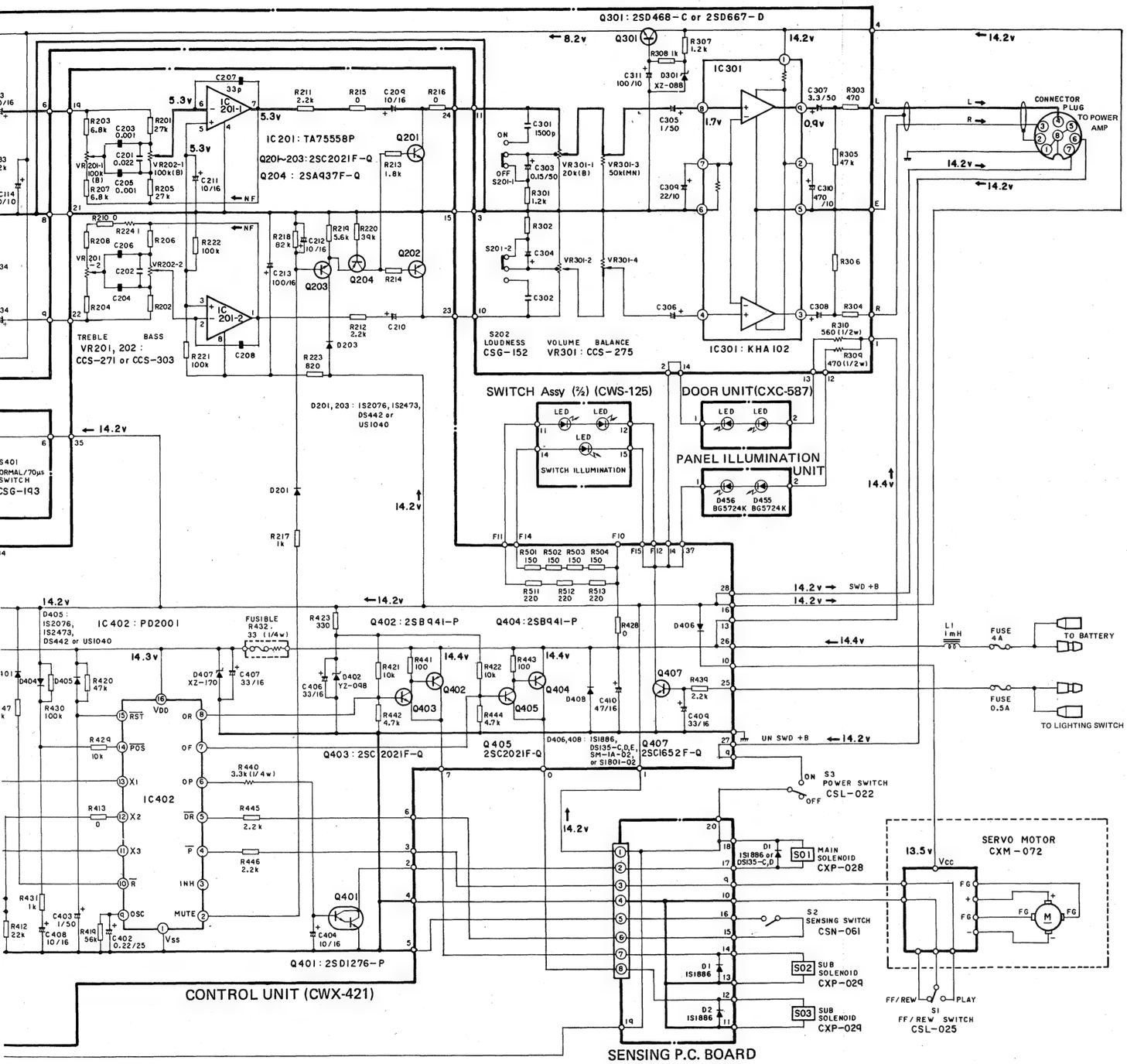



IC402:PD2001



# 6. SCHEMATIC CIRCUIT DIAGRAM






NOTE:

Indicates a chip resistor

Indicates a chip capacitor.

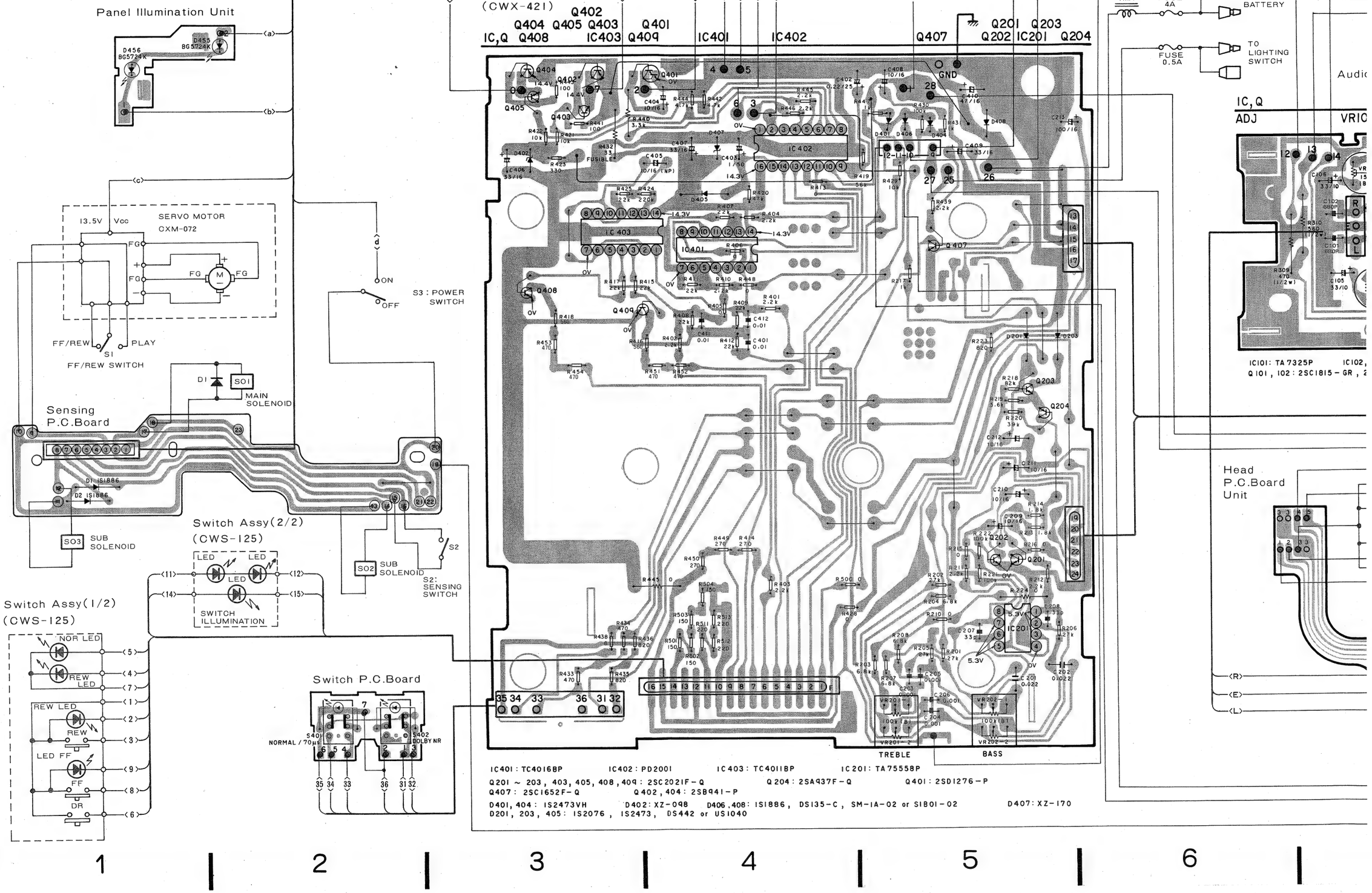
**SWITCHES:**

- **HEAD P.C. BOARD UNIT**
  - S1 : HEAD SELECTOR SWITCH . . . . . NORMAL – REVERSE
- **SWITCH P.C. BOARD**
  - S401 : NORMAL/70μs SWITCH . . . . . NORMAL – 70μs
  - S402 : DOLBY NR SWITCH . . . . . ON – OFF
- **AUDIO UNIT**
  - S201 : LOUDNESS SWITCH . . . . . ON – OFF
- **MISCELLANEOUS**
  - S1 : FF/REW SWITCH . . . . . PLAY – FF/REW
  - S2 : SENSING SWITCH . . . . . ON – OFF
  - S3 : POWER SWITCH . . . . . ON – OFF

** The underlined indicates the switch position.*

Fig. 12

## 7. CONNECTION DIAGRAM



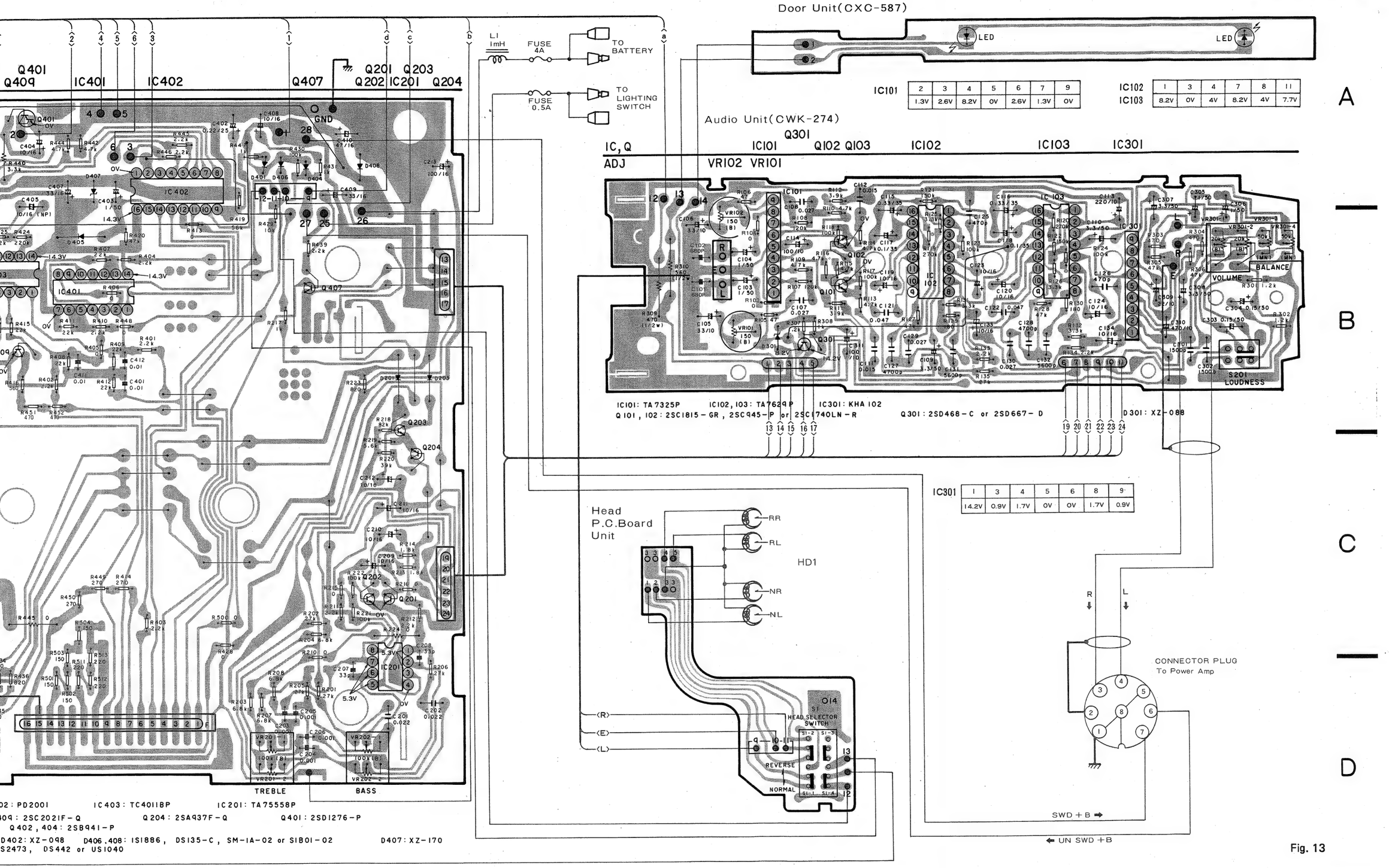

Door Unit(CXC-587)
LED
LED
IC101 2 3 4 5 6 7 9
1.3V 2.6V 8.2V 0V 2.6V 1.3V 0V
IC102 IC103 1 3 4 7 8 11
8.2V 0V 4V 8.2V 4V 7.7V
Audio Unit(CWK-274)
Q301
IC,Q IC101 Q102 Q103 IC102 IC103 IC301
ADJ VR102 VR101
IC101: TA7325P IC102, 103: TA7629P IC301: KHA102
Q101, 102: 2SC1815-GR, 2SC945-P or 2SC1740LN-R Q301: 2SD468-C or 2SD667-D D301: XZ-088
IC301 1 3 4 5 6 8 9
14.2V 0.9V 1.7V 0V 0V 1.7V 0.9V
Head P.C.Board Unit
RR
RL
NR
NL
HD1
<R>
<E>
<L>
S14 S1 HEAD SELECTOR SWITCH
REVERSE
NORMAL
CONNECTOR PLUG To Power Amp
R
L
SWD + B
UN SWD + B
LI 1mH
FUSE 4A
FUSE 0.5A
TO BATTERY
TO LIGHTING SWITCH
BALANCE
VOLUME
S201 LOUDNESS
TREBLE
BASS
IC403: TC4011BP IC201: TA75558P
Q204: 2SA937F-Q Q401: 2SD1276-P
Q402, 404: 2SB941-P
D402: XZ-098 D406, 408: 1S1886, DS135-C, SM-1A-02 or S1B01-02 D407: XZ-170
DS2473, DS442 or US1040

Fig. 13

## 8. CABINET EXPLODED VIEW

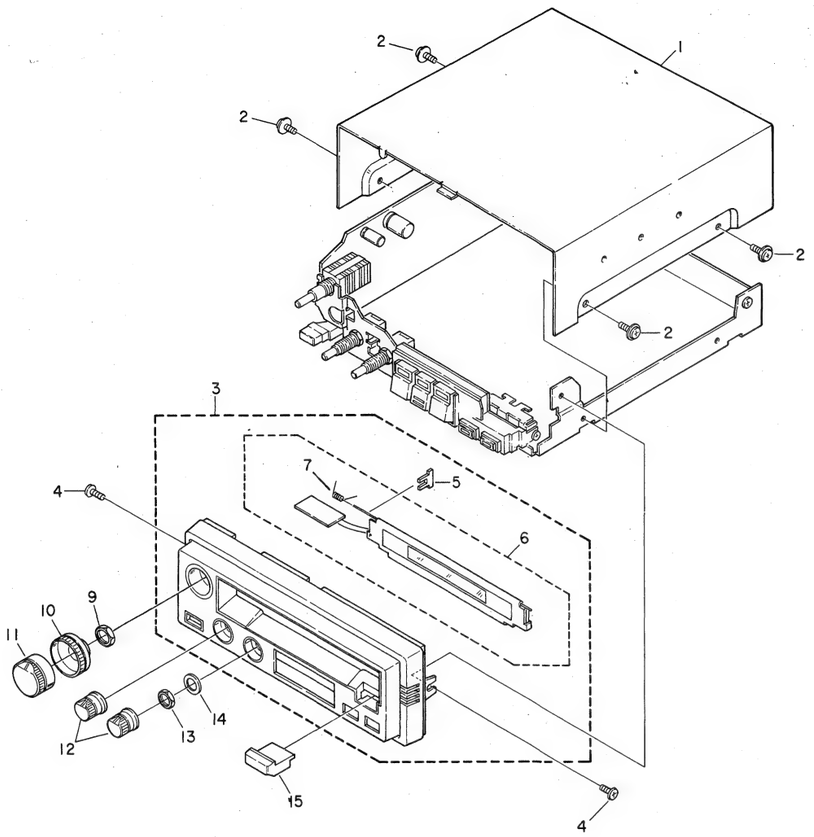


Fig. 14

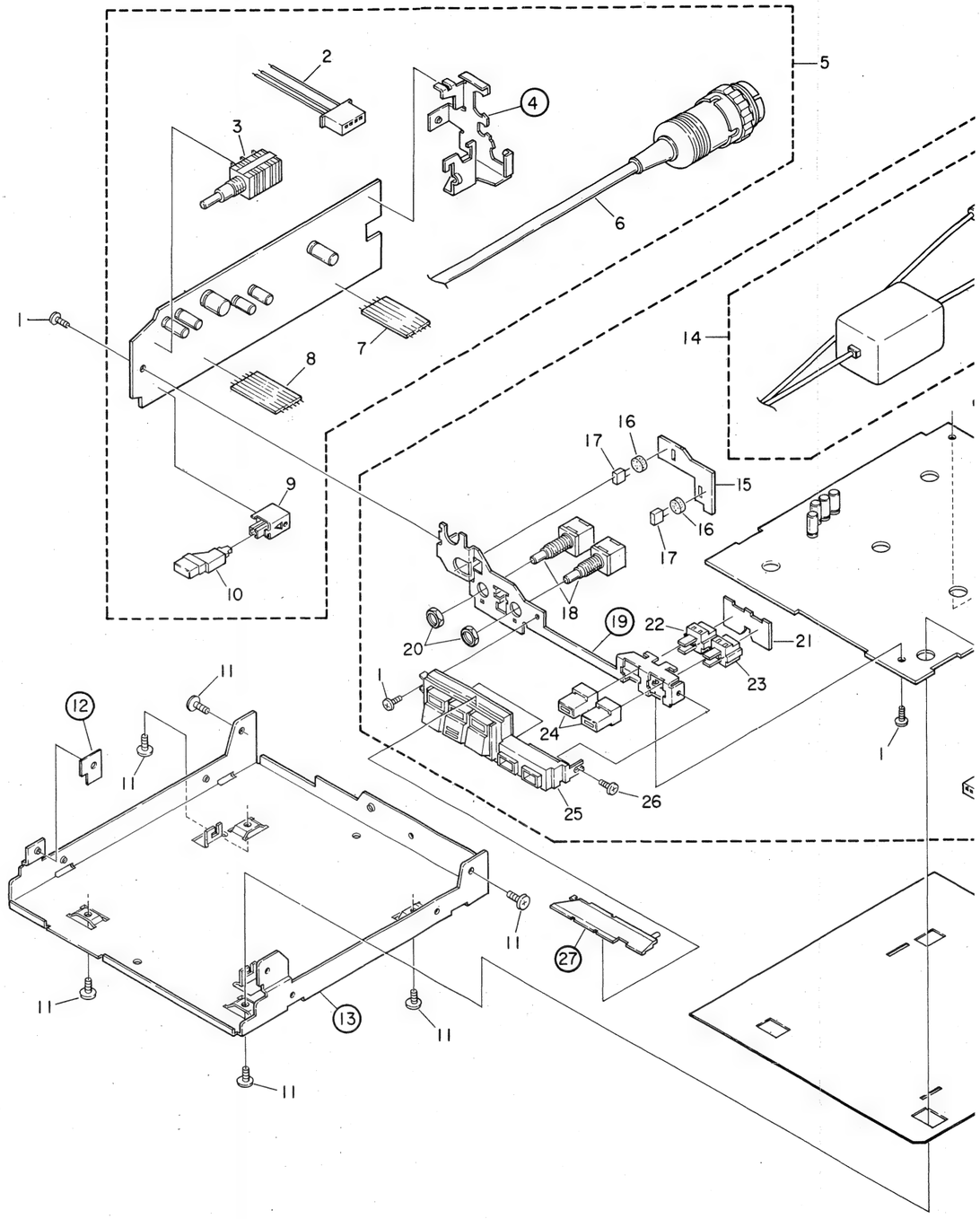
### • Parts List

| Mark | No. | Part No. | Description |
|---|---|---|---|
| | 1. | CNB-675 | Case |
| | 2. | BMZ30P050FBK | Screw |
| | 3. | CXC-589 | Grille Assy (KP-717G) |
| | 4. | BMZ30P040FMC | Screw |
| | 5. | CNE-516 | Holder |
| | 6. | CXC-587 | Door Unit |
| | 7. | CBH-549 | Spring |
| | 8. | VACANT | |

| Mark | No. | Part No. | Description |
|---|---|---|---|
| | 9. | CBA-067 | Nut (M7) |
| ★ | 10. | CAA-394 | Knob (BALANCE) |
| ★ | 11. | CAA-393 | Knob (VOLUME) |
| ★ | 12. | CAA-344 | Knob (BASS, TREBLE) |
| | 13. | CBA-066 | Nut (M6) |
| | 14. | CBF-091 | Washer (M6) |
| ★ | 15. | CAC-448 | Button (EJECT) |



## 9. CHASSIS EXPLODED VIEW



## 9. CHASSIS EXPLODED VIEW

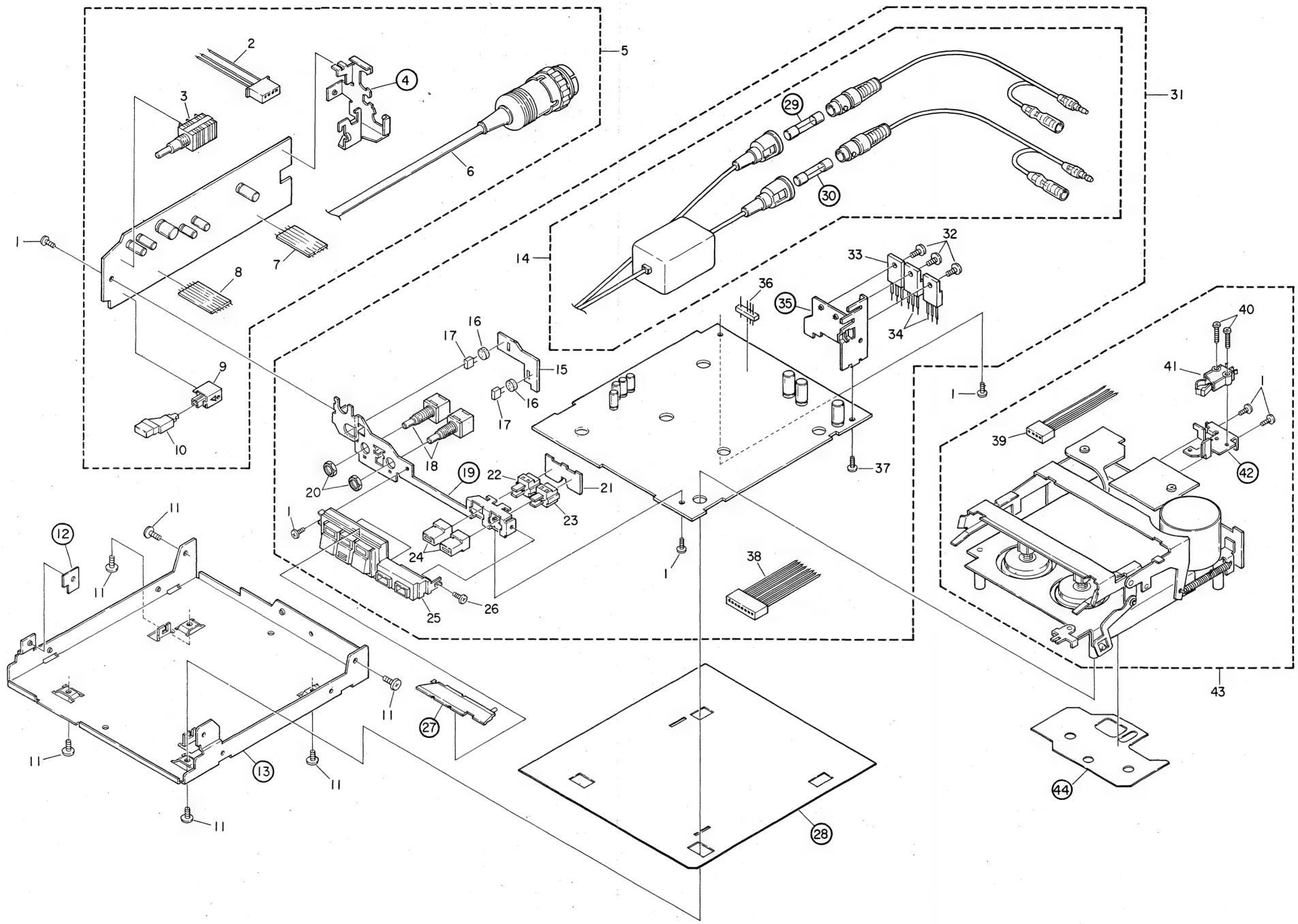



Fig. 15

## • Parts List

*NOTE*

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  *★★ : GENERALLY MOVES FASTER THAN ★.*
  *This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*
- *Parts whose parts numbers are omitted are subject to being not supplied.*

| Mark | No. | Part No. | Description |
|---|---|---|---|
| | 1. | BMZ26P040FMC | Screw |
| | 2. | CDE-839 | Connector (3P) |
| ★★ | 3. | CCS-275 | Volume, 20kΩ(B), 50kΩ(MN) (VOLUME/BALANCE) |
| | 4. | | Holder |
| | 5. | CWK-274 | Audio Unit |
| | 6. | CDE-904 | Connector |
| | 7. | CDF-108 | Connector (5P) |
| | 8. | CDF-110 | Connector (6P) |
| ★★ | 9. | CSG-152 | Switch (LOUDNESS) |
| | 10. | CAC-489 | Button (LOUDNESS) |
| | 11. | BMZ30P040FHC | Screw |
| | 12. | | Insulator |
| | 13. | | Chassis |
| | 14. | CDF-104 | Cord |
| | 15. | CNL-196 | P.C. Board |
| | 16. | CNV-724 | Bush |
| ★ | 17. | BG5724K | LED (Panel Illumination) |
| ★★ | 18. | CCS-271 or CCS-303 | Volume, 100kΩ(B) (BASS, TREBLE) |
| | 19. | | Holder |
| | 20. | CBA-066 | Nut (M6) |
| | 21. | CNL-181 | P.C. Board |
| ★★ | 22. | CSG-192 | Switch (DOLBY NR) |
| ★★ | 23. | CSG-193 | Switch (NORMAL/70μs) |
| ★ | 24. | CAC-491 | Button (DOLBY NR, NORMAL/70μs) |
| ★★ | 25. | CWS-125 | Switch Assy |
| | 26. | BMZ26P030FMC | Screw |
| | 27. | | Lens |
| | 28. | | Insulator |
| | 29. | | Fuse, 0.5A |
| | 30. | | Fuse, 4A |
| | 31. | CWX-421 | Control Unit |
| | 32. | BMZ30P050FMC | Screw |
| ★★ | 33. | 2SD1276 | Transistor |
| ★★ | 34. | 2SB941 | Transistor |
| | 35. | | Heat Sink |
| | 36. | CKS-094 | Plug (4P) |
| | 37. | PMZ26P040FMC | Screw |
| | 38. | CDF-111 | Connector (8P) |
| | 39. | CDF-092 | Connector (4P) |
| | 40. | BMZ20P080FMC | Screw |
| ★★ | 41. | CSL-022 | Switch (POWER) |
| | 42. | | Lever Unit |
| | 43. | CXC-546 | Cassette Mechanism Assy |
| | 44. | | Insulator |

# 10. CASSETTE MECHANISM EXPLODED VIEW(TOP)

- **Parts List**

*NOTE*

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  *★★ : GENERALLY MOVES FASTER THAN ★.*
  *This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*
- *Parts whose parts numbers are omitted are subject to being not supplied.*

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|---|---|---|---|---|---|---|---|
| | 1. | BMZ20P080FMC | Screw | | 37. | CXB-861 | Lever Unit |
| ★★ | 2. | CSL-025 | Switch (FF/REW) | | 38. | | Arm |
| | 3. | BMZ26P030FMC | Screw | | 39. | CBH-536 | Spring |
| | 4. | | Bracket | | 40. | CXB-862 | Bracket Unit |
| | 5-7. | VACANT | | | 41. | CMZ26P040FMC | Screw |
| | 8. | BMZ26P040FMC | Screw | | 42. | CNE-326 | Lever |
| | 9. | CNR-128 | Bearing | | 43. | CNV-952 | Arm |
| | 10. | CXB-843 | Gear Unit | | 44. | CNV-951 | Arm |
| | 11. | CNV-950 | Gear | | 45. | CBH-553 | Spring |
| | 12. | CBF-045 | Washer | | 46. | CBH-531 | Spring |
| | 13. | CBH-524 | Spring | | 47. | CXB-853 | Lever Unit |
| | 14. | YE20FUC | Washer | | 48. | CNE-327 | Lever |
| ★★ | 15. | CXB-993 | Roller Unit | | 49. | CNV-953 | Arm |
| | 16. | YE15FUC | Washer | | 50. | | |
| | 17. | CBH-560 | Spring | | 51. | CXB-969 | Arm Unit |
| | 18. | CNV-947 | Arm | | 52. | CLA-845 | Bush |
| | 19. | CXC-055 | Lever | | 53. | CMZ26P060FMC | Screw |
| | 20. | CNR-129 | Bearing | | 54. | CLA-844 | Bush |
| | 21. | CXB-844 | Gear Unit | | 55. | | Arm |
| | 22. | PMS20P040FMC | Screw | | 56. | CBH-535 | Spring |
| | 23. | CBA-082 | Screw | | 57. | CXB-971 | Holder Unit |
| ★★ | 24. | CPB-066 or CPB-353 | Head | | 58. | CBH-542 | Spring |
| | | | | | 59. | CBH-561 | Spring |
| | 25. | CBL-178 | Spring | ★★ | 60. | CXB-994 | Roller Unit |
| | 26. | CNW-064 | Rubber | | 61. | CNV-988 | Lever |
| | 27. | CBH-528 | Spring | | 62. | CLA-846 | Bush |
| | 28. | CBE-065 | Washer | | 63. | CBH-532 | Spring |
| | 29. | CNV-987 | Arm | | 64. | CBH-537 | Spring |
| | 30. | CXC-259 | Head Base Unit | | 65. | CXB-858 | Bracket Unit |
| | 31. | CLA-831 | Roller | | 66. | CNL-192 | P.C. Board |
| | 32. | | Cam | | 67. | CKS-052 | Plug (3P) |
| | 33. | CBH-529 | Spring | ★★ | 68. | CSH-062 | Switch (HEAD SELECTOR) |
| | 34. | CXB-852 | Lever Unit | | 69. | BMZ26P040FMC | Screw |
| | 35. | | Chassis Unit | | 70. | WH26FMC | Washer |
| | 36. | CXB-851 | Lever Unit | | | | |

- Cassette Mechanism Exploded View (TOP)

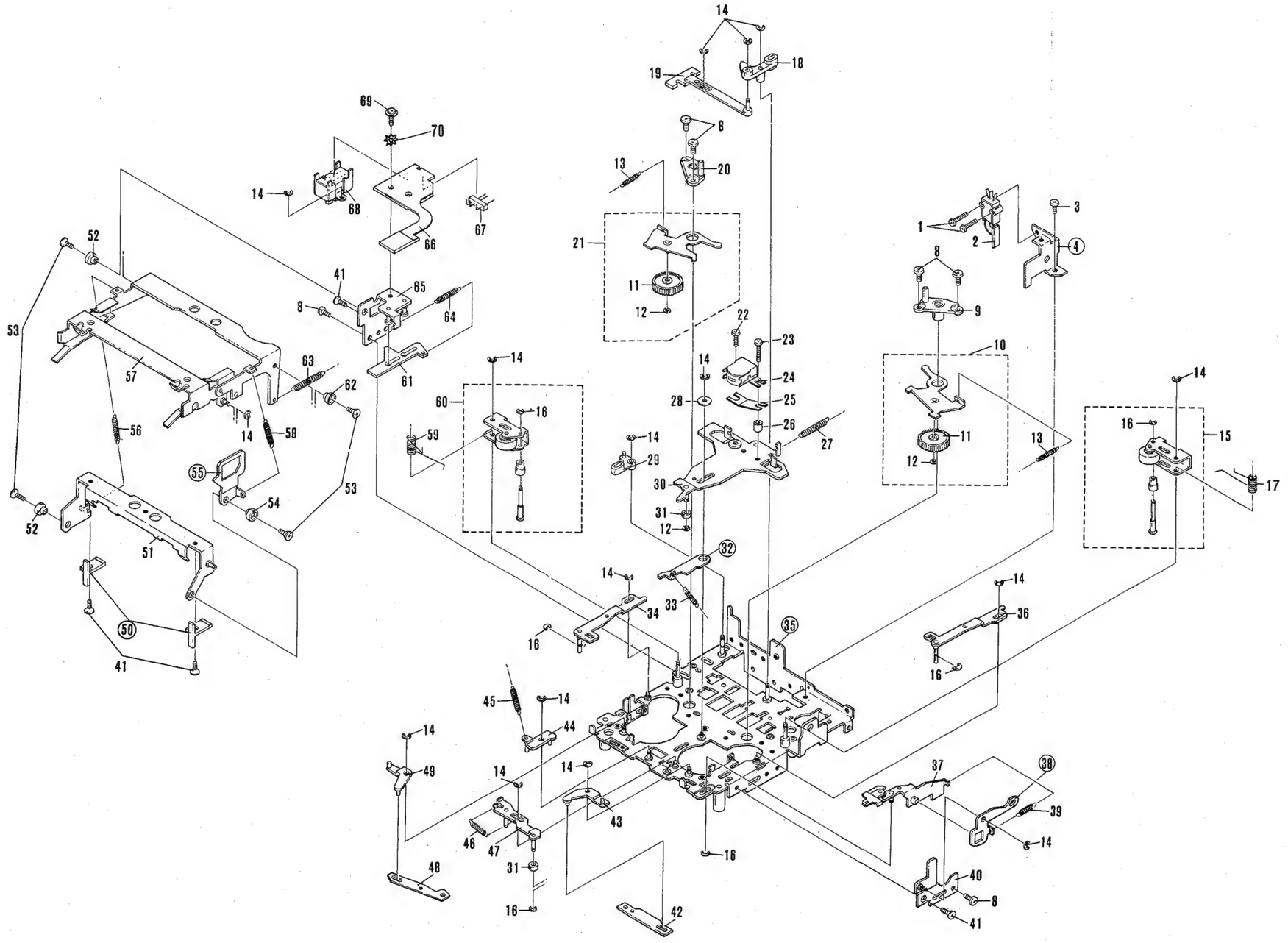



Fig. 16

## 11. CASSETTE MECHANISM EXPLODED VIEW(BOTTOM)

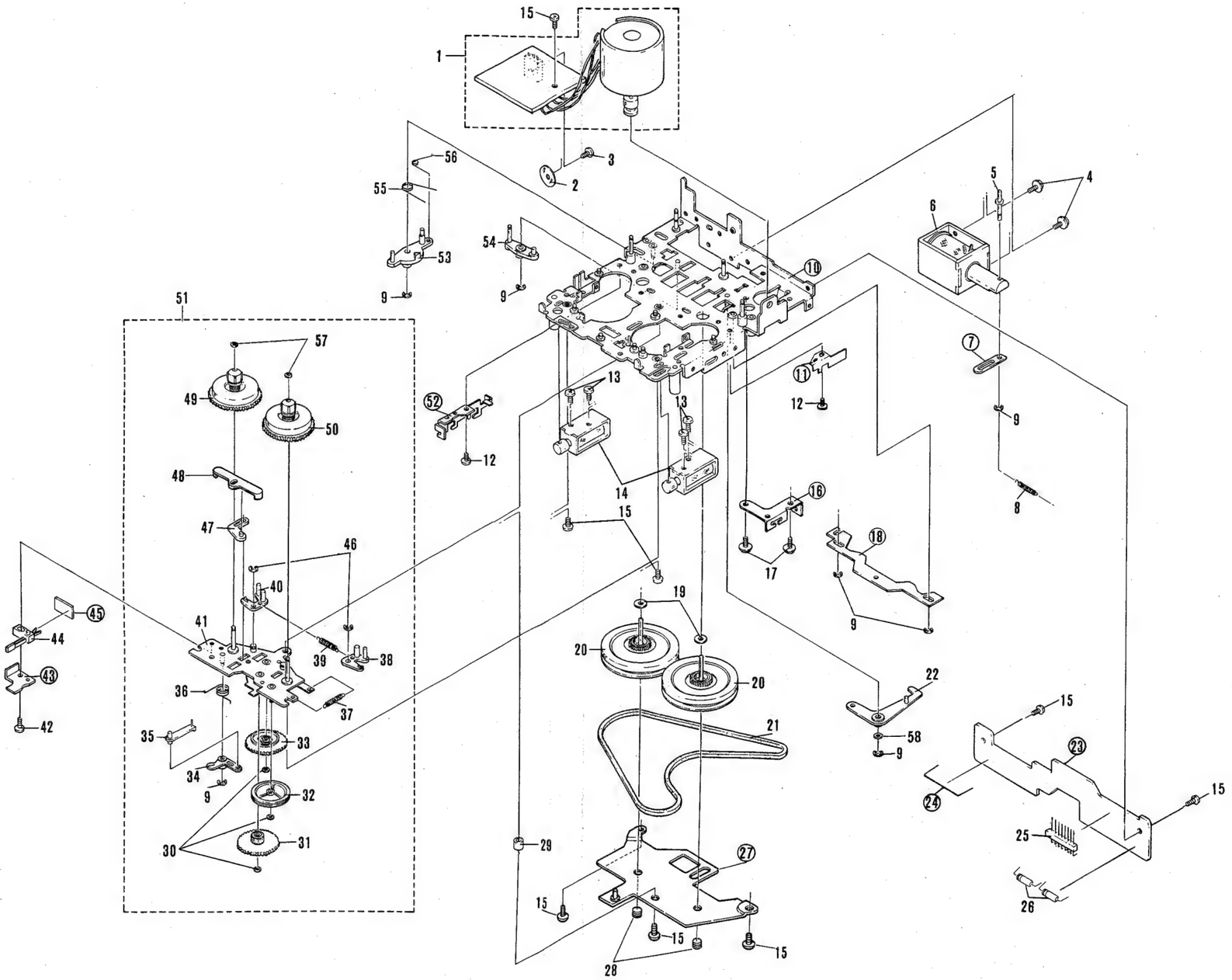



Fig. 17

## • Parts List

*NOTE*

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  *★★ : GENERALLY MOVES FASTER THAN ★.*
  *This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*
- *Parts whose parts numbers are omitted are subject to being not supplied.*

| Mark | No. | Part No. | Description |
|---|---|---|---|
| ★★ | 1. | CXM-072 | Motor |
| | 2. | CNM-513 | Spacer |
| | 3. | BMZ26P060FMC | Screw |
| | 4. | PMS26P040FMC | Screw |
| | 5. | CLA-825 | Shaft |
| ★ | 6. | CXP-028 | Solenoid |
| | 7. | | Arm |
| | 8. | CBH-527 | Spring |
| | 9. | YE20FUC | Washer |
| | 10. | | Chassis Unit |
| | 11. | | Bracket |
| | 12. | BMZ26P030FMC | Screw |
| | 13. | BMZ20P025FMC | Screw |
| ★ | 14. | CXP-029 | Solenoid |
| | 15. | BMZ26P040FMC | Screw |
| | 16. | | Bracket |
| | 17. | PMS26P030FMC | Screw |
| | 18. | | Cam |
| | 19. | CBF-111 | Washer |
| | 20. | CNR-130 | Flywheel |
| ★★ | 21. | CNT-083 | Belt |
| | 22. | CZC-073 | Arm Unit |
| | 23. | | P C. Board |
| | 24. | | |
| | 25. | CKS-054 | Plug (8P) |
| ★ | 26. | IS1886 | Diode |
| | 27. | | Holder |
| | 28. | CNV-984 | Screw |
| | 29. | CLA-817 | Collar |
| | 30. | CBF-046 | Washer |
| | 31. | CNV-955 | Gear |
| | 32. | CLA-914 | Pulley |
| | 33. | CNV-956 | Gear |
| | 34. | CNV-962 | Lever |
| | 35. | CNV-959 | Arm |
| | 36. | CBH-521 | Spring |
| | 37. | CBH-548 | Spring |
| | 38. | CNV-960 | Lever |
| | 39. | CBH-520 | Spring |
| | 40. | CNV-961 | Lever |
| | 41. | CXB-829 | Sub Chassis Unit |
| | 42. | BMZ20P080FMC | Screw |
| | 43. | | Cover |
| ★★ | 44. | CSN-061 | Switch (SENSING) |
| | 45. | | P.C. Board |
| | 46. | YE25FUC | Washer |
| | 47. | CNV-958 | Lever |
| | 48. | CNV-957 | Arm |
| | 49. | CXB-833 | Reel Unit |
| | 50. | CXB-832 | Reel Unit |
| | 51. | CXB-977 | Sub Chassis Assy |
| | 52. | | Bracket |
| | 53. | CNR-093 | Arm |
| | 54. | CXB-919 | Arm |
| | 55. | CBH-526 | Spring |
| | 56. | CBH-525 | Spring |
| | 57. | CBF-045 | Washer |
| | 58. | CBE-077 | Washer |

# 12. ELECTRICAL PARTS LIST

*NOTE:*
*When ordering resistors, first convert resistance values into code form as shown in the following examples.*

*Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).*

| | | | |
|---|---|---|---|
| 560Ω | $56 \times 10^1$ | 561 ..... | RD1/4PS 5 6 1 J |
| 47kΩ | $47 \times 10^3$ | 473 ..... | RD1/4PS 4 7 3 J |
| 0.5Ω | 0R5 ..... | | RN2H 0 R 5 K |
| 1Ω | 010 ..... | | RS1P 0 1 0 K |

*Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).*

5.62KΩ $562 \times 10^1$ ..... RN1/4SR 5 6 2 1 F

- *For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.*
  *★ ★: GENERALLY MOVES FASTER THAN ★.*
  *This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*
- *Parts whose parts numbers are omitted are subject to being not supplied.*

## Control Unit (CWX-421)

### MISCELLANEOUS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★★ | TA75558P | IC201 |
| ★★ | TC4016BP | IC401 |
| ★★ | PD2001 | IC402 |
| ★★ | TC4011BP | IC403 |
| ★★ | 2SC2021F | Q201–Q203, Q403, Q405 Q408, Q409 |
| ★★ | 2SA937F | Q204 |
| ★★ | 2SD1276 | Q401 |
| ★★ | 2SB941 | Q402, Q404 |
| | VACANT | Q406 |
| ★★ | 2SC1652F | Q407 |
| ★★ | 1S2076 or 1S2473 or DS442 or US1040 | D201, D203, D405 |
| | VACANT | D202 |
| ★ | 1S2473VH | D401, D404 |
| ★ | XZ-098 | D402 |
| | VACANT | D403 |
| ★ | 1S1886 or SIB01-02 or SM-1A-02 or DS135 | D406, D408 |
| ★ | XZ-170 | D407 |
| ★★ | CCS-271 or CCS-303 | VR201, VR202 Volume,100kΩ(B) |

### RESISTORS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | RS1/8S□□□J | R201–R223, R401–R425, R428–R431, R433–R436, R438, R439, R441–R454, R500–R504, R511–R513 (Chip Resistor) |
| | HCN-106 | R432 Fuse Resistor 33Ω(¼W) |
| | RD1/4PM□□□J | R224, R440 |
| | VACANT | R426, R427, R437, R505–R510 |
| | CCN-027 | R455 0Ω |

### CAPACITORS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | CAMA 223J 50L | C201, C202 |
| | CKSYB 102K 50 | C203–C206 Chip Capacitor |
| | CCSSL 330K 50 | C207, C208 Chip Capacitor |
| | CEA 100M 16LL | C209–C212 |
| | CEA 101M 16L | C213 |
| | CKSYB 103K 50 | C401, C411, C412 Chip Capacitor |
| | CEANL R22M 50L or CSYA R22M 25SAN | C402 |
| | CEA 010M 50L | C403 |
| | CEA 100M 16L | C404, C408 |
| | CEA 100M 16NP | C405 |
| | CEA 330M 16L | C406, C407, C409 |
| | CEA 470M 16L | C410 |

## Audio Unit (CWK-274)

### MISCELLANEOUS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★★ | TA7325P | IC101 |
| ★★ | TA7629P | IC102, IC103 |
| ★★ | KHA102 | IC301 |
| ★★ | 2SC1815 or 2SC945 or 2SC1740LN | Q101, Q102 |
| ★★ | 2SD468 or 2SD667 | Q301 |
| ★ | XZ-088 | D301 |
| ★★ | CCP-089 | VR101, VR102 Semi-fixed, 150Ω(B) |
| ★★ | CCS-275 | VR301 Volume, 20kΩ(B),50kΩ(MN) (VOLUME/BALANCE) |
| ★★ | CSG-152 | S201 Switch (LOUDNESS) |

### RESISTOR

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | VACANT | R101, R102 |
| | RS1/8S□□□J | R103–R135, R301–R308 Chip Resistor |
| | RS1/2S□□□J | R309, R310 |

### CAPACITORS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | CKSYB 681K 50 | C101, C102 |
| | CEA 010M 50L | C103, C104, C305, C306 |
| | CEA 330M 10L | C105, C106 |
| | CAMA 273J 50L | C107, C108, C129, C130 |
| | CEA 3R3M 50L | C109, C110, C307, C308 |
| | CAMA 153J 50L | C111, C112 |
| | CEAH 221M 10L | C113 |
| | CEA 101M 10L | C114. C311 |
| | CSEA R33M 35 | C115, C116 |
| | CSEA R10M 35 | C117, C118 |
| | CEA 100M 16L | C119, C120, C124, C133, C134 |
| | CAMA 473J 50L | C121, C122 |
| | CEAH 100M 16L | C123 |
| | CCDSL 471J 50L | C125, C126 |
| | CAMA 472J 50L | C127, C128 |
| | CAMA 562J 50L | C131, C132 |
| | CAMA 152J 50L | C301, C302 |
| | CEA R15M 50LL | C303, C304 |
| | CEA 220M 10L | C309 |
| | CEA 471M 10L | C310 |

## Switch P.C. Board

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★★ | CSG-193 | S401 Switch (NORMAL/70μs) |
| ★★ | CSG-192 | S402 Switch (DOLBY NR) |

## Head P.C. Board Unit

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★★ | CSH-062 | S1 Switch (HEAD SELECTOR) |

## Panel Illumination Unit

| Mark | Part No. | Symbol &Description |
|---|---|---|
| ★ | BG5724K | D455, D456 LED |

## Sensing P.C. Board

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★ | IS1886 | D1, D2 |

## Miscellaneous Parts List

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★★ | CSL-025 | S1 Switch (FF/REW) |
| ★★ | CSN-061 | S2 Switch (SENSING) |
| ★★ | CSL-022 | S3 Switch (POWER) |
| ★★ | CXM-072 | M Motor |
| ★ | CXP-028 | SO1 Main Solenoid |
| ★ | CXP-029 | SO2, SO3 Sub Solenoid |
| ★ | IS1886 or DS135 | D1 |
| ★★ | CPB-066 or CPB-353 | HD1 Head |

# 13. PACKING METHOD

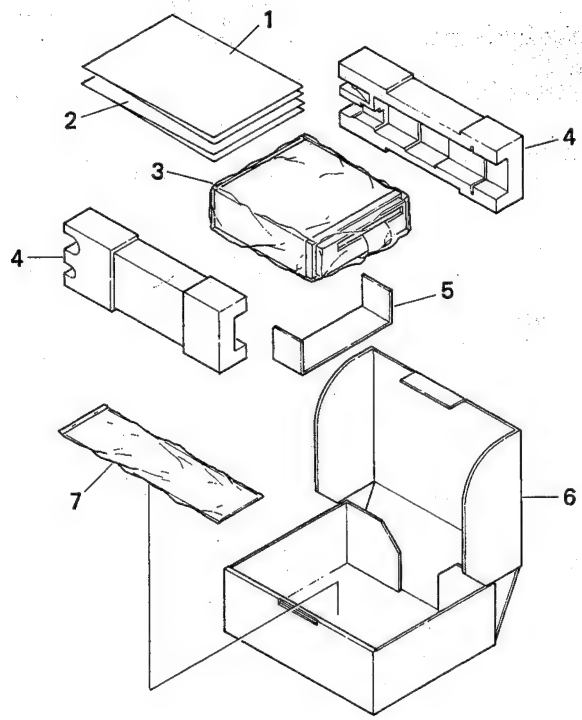



Fig. 18

- **Parts List**
- *Parts whose parts numbers are omitted are subject to being not supplied.*

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|---|---|---|---|---|---|---|---|
| | 1. | CRD-267 | Owner's Manual (English, French, German, Spanish) | | 7-1. | CNF-111 | Strap |
| | | | | | 7-2. | CDE-437 | Cord |
| | | | | | 7-3. | CBA-028 | Screw for Strap |
| | 2. | CRD-268 | Owner's Manual (Swedish, Norwegian, Dutch, Italian) | | 7-4. | CBA-101 | Screw, M4 x 6 |
| | | | | | 7-5. | CBA-102 | Screw, M5 x 16 |
| | | | | | 7-6. | B70-055 | WN4$\phi$ x 4.5t |
| | 3. | CEG-113 | Cover | | 7-7. | B70-056 | WN5$\phi$ x 5.3t |
| | 4. | CHC-560 | Styrofoam (1 set pair) | | 7-8. | WS40FMC | Washer |
| | 5. | CNB-198 | Mounting Bracket | | | | |
| | 6. | CHC-558 | Carton | | | | |
| | 7. | CEA-466 | Accessory Kit | | | | |

571

# CX-118SM CX-118SV CX-118FV
# CX-118SM/A CX-118SV/A CX-118FV/A

## CASSETTE MECHANISM UNIT

# SERVICE MANUAL

Original

**Subject:**
This Service Manual deals with the CX-118SM ~ CX-118FV/A car stereo auto reverse cassette mechanisms.
Check the number of the mechanism to verify which of the six mechanisms is being used before use. For parts which do not make up the cassette mechanism, refer to the service manual of the model concerned.

| Model | Serial No. | Cassette Mechanism Unit |
|---|---|---|
| KP-575/U | 26601~ | CX-118SM |
| KP-575/C | 02601~ | CX-118SM |
| KP-575/E | 30701~ | CX-118SM |
| KP-77G/U | 10701~ | CX-118SV/A |
| KP-77G/C | 00601~ | CX-118SV/A |
| KP-77G/E | 13501~ | CX-118SV |
| KP-707G/U | 11501~ | CX-118FV/A |
| KP-707G/C | 00001~ | CX-118FV/A |
| KP-707G/E | 10101~ | CX-118FV |
| KP-4500/E | 14001~ | CX-118SM/A |
| KP-4800/E | 07001~ | CX-118SM/A |
| KP-4502/US | 00001~ | CX-118SM/A |

| Model | Serial No. | Cassette Mechanism Unit |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

PIONEER®

571

# MECHANISM DESCRIPTION

## • Cassette loading

1. When the Cassette is inserted, Arm (A) moves in the arrowed direction. Pin (B) is for the cassette holder support arm. Arm (B), which is supported by the Pin (B), does not move together with Arm (A) (Fig. 1).

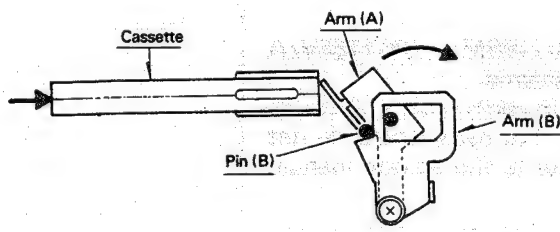



Fig. 1

2. With the cassette fully inserted, the Pin (A), attached to Arm (A), allows Arm (B) to rotate, and Pin (B), supported by Arm (B), disengages. Simultaneously, Arm (A) serves to actuate the Power Switch (Fig. 2).

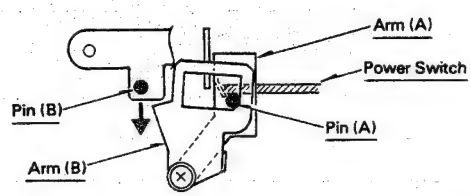



Fig. 2

3. As a result of the action in 1 and 2 above, Pin (B), through the tension of Spring (C), moves downward, causing the Cassette Holder to move in the same direction and complete loading (Fig. 3 and 4).

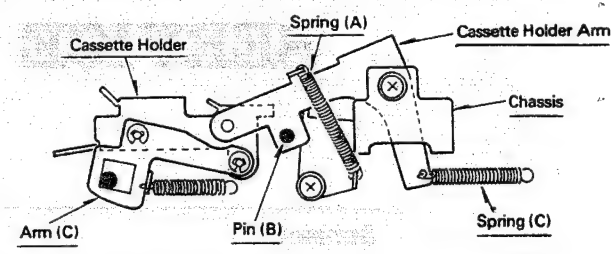



Fig. 3

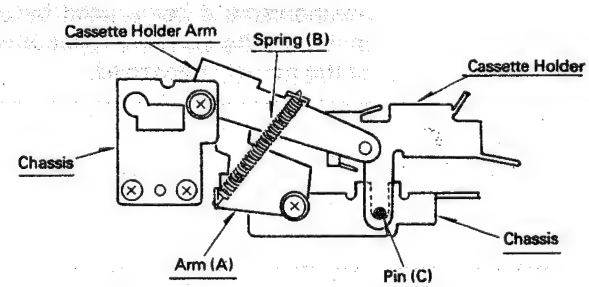



Fig. 4

## • Eject mechanism

With Eject Lever (E) moved in the arrowed direction, the head base is unlocked (in a manner to be described later) causing Pin (D), attached to Lever (E) to turn Arm (C) upward. As a result, the cassette is ejected following the reverse order of actions 1 through 3 above (Fig. 5).

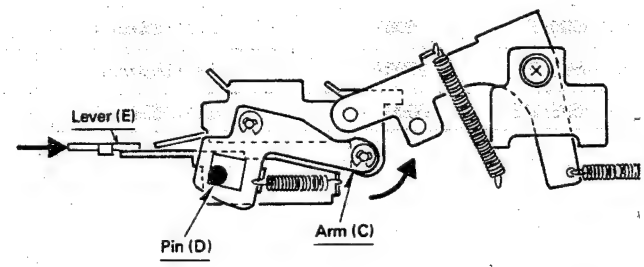



Fig. 5

## • Tape tightening mechanism (Fig. 6)

1. The Flywheel and Pulley (A) are Belt driven by the Motor. The Reel Units are each driven by the gear connected to the Flywheel through the Idler. As seen in Fig. 6, the Capstan always rotates in the arrowed direction.
2. At the time the cassette is loaded, each Reel Unit rotates in the direction indicated by dotted line, inasmuch as the head base has yet to advance.
   Since the pinch roller is separated from the Capstan, the tape is wound at high speed on both reels, tape slack is taken up, and, sequentially, the sensing mechanism is activated.

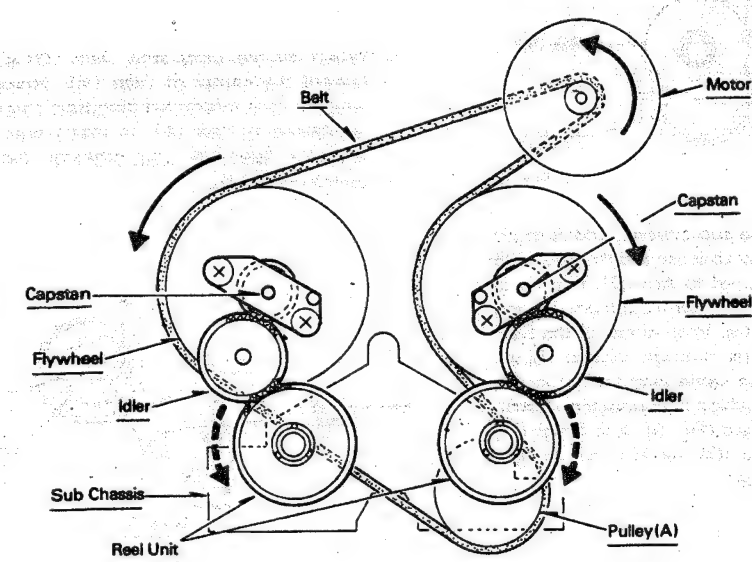



Fig. 6

## • Anti-reel reversal mechanism (Fig. 7)

1. Claws (A) and (B) serve to prevent the Reel Units from reversing owing to difference in torque between them before the tape is wound up, and the sensing mechanism is activated.
2. Claw (A), while rotating in the arrowed direction together with the Reel Unit, flips Claw (B) protruding from Lever (B) to continue rotation. However, Claw (A), in reversing its rotation, is caught by Claw (B), with the result Lever (B) is turned toward the Chassis side around Fulcrum (P). Pin (E) engages the Chassis to prevent Lever (B) from turning, causing reverse rotations, if any, to be brought to a stop within 180°.
3. In PLAY mode, the Head Base advances to rotate Lever (B) outside the Chassis so that it will not be caught by Claws (A) and (B). In F.F./REWIND, Pin (F) is made to rotate outside the Chassis by Arm (E), so that Lever (B) will not be caught by Claws (A) and (B).

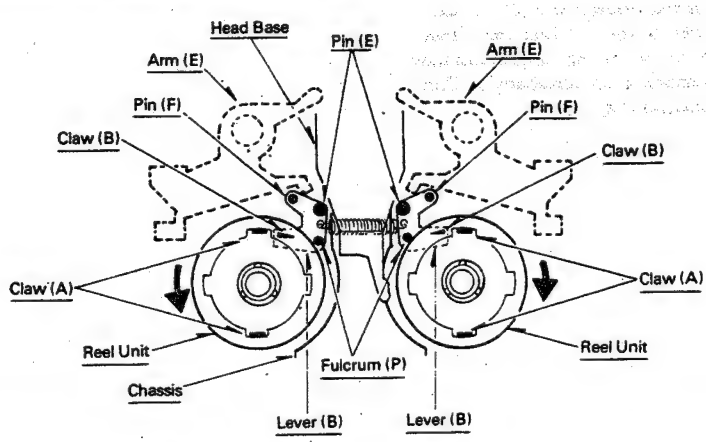



Fig. 7

## • Sensing mechanism

1. Gear (A) always rotates in the arrowed direction via Pulley (A) and another gear. Cam (A) and the Guide are secured to Gear (A) (Fig. 8).

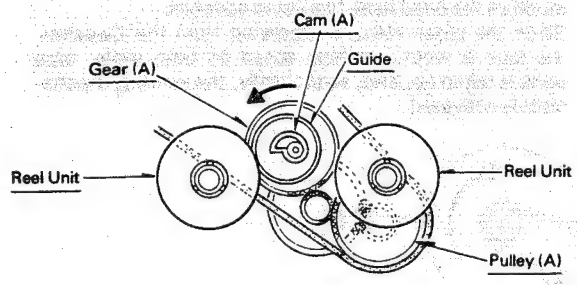



Fig. 8

2. Fulcrum (Q) is secured to the sub-chassis, and Arm (F) rotates together with the Reel Unit around the Reel Unit shaft via felt. Pin (G) is secured to Arm (F), Pin (H) to Lever (F), and Pin (I) to Arm (G), with each pin moving along the oval hole in its mate. With either of the Reel Units rotating, Arm (F) turns through friction. Since Arm (F) rotates either in the same direction or in the outward direction, Pin (H), which is connected to Arm (D) never fails to move upward (Fig. 9). And Lever (F), which is connected to Arm (D) via Pin (H), is thus applied through external force.

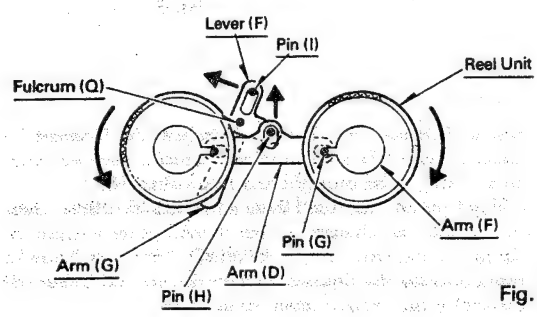



Fig. 9

3. As a result of the action of the Guide, Arm (G), at each rotation, moves toward the center of Gear (A). However, Lever (F) pushes Arm (G) in the circumferential direction of Gear (A), so there is no possibility of Cam (A) pushing Arm (G) downward (Fig. 10).

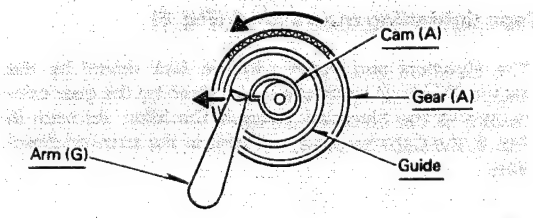



Fig. 10

4. When the reel units stop, Arm (G) is led by the Guide toward the center of Gear (A). However, Arm (G) to which a circumferential direction force is not applied is depressed by Cam (A), so that Lever (G) moves in the arrowed direction and presses the Main Solenoid Switch (Fig. 11).

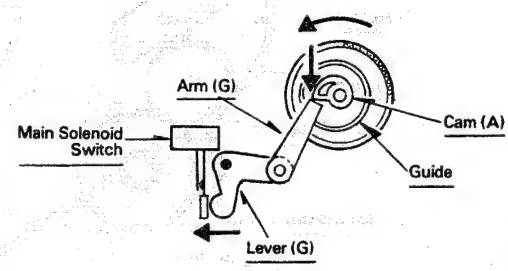



Fig. 11

5. With this, Auto Reverse, F.F./REWIND or cassette loading can be switched from the state of tape being tightened to PLAY mode.

## • Head base advance mechanism (CX-118SM, 118SV, 118SM/A, 118SV/A)

1. With activation of the sensing mechanism, the main solenoid switch is turned on, so that Arm (I) is rotated counterclockwise and pushes Pin (J), which is attached to the head base. Simultaneously, Arm (I) depresses the FF/REW Switch which is designed to vary the motor speed. When Arm (I) is disengaged, the motor speed is set for fast forward and rewind operations, and when depressed, the speed is set for tape play. Arm (K), attached to the Main Solenoid, is provided with an oval hole for purpose of rotating, and is returned to its normal position by Spring (E) (Fig. 12).

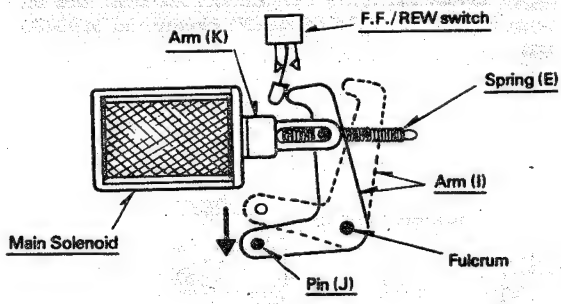



Fig. 12

2. The Head Base moves downward, as shown in Fig. 13, and is locked by Arm (J) and the Roller mounted on the Head Base. In F.F./REWIND and Ejection, Lever (C) moves left to disengage Arm (J) so that the Head Base is unlocked for return to its normal position by Spring (D).

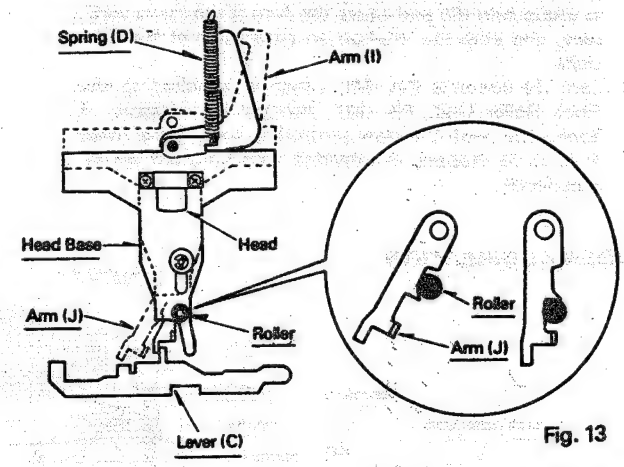



Fig. 13

## • Head base advance mechanism (CX-118FV, 118FV/A)

1. With activation of the sensing mechanism, the main solenoid switch is turned on, so that Arm (I) is rotated counterclockwise and pushes Pin (J), which is attached to the head base. Simultaneously, Arm (I) depresses the FF/REW Switch which is designed to vary the motor speed. When Arm (I) is disengaged, the motor speed is set for fast forward and rewind operations, and when depressed, the speed is set for tape play. Arm (K), attached to the Main Solenoid, is provided with an oval hole for purpose of rotating, and is returned to its normal position by Spring (E) (Fig. 14).

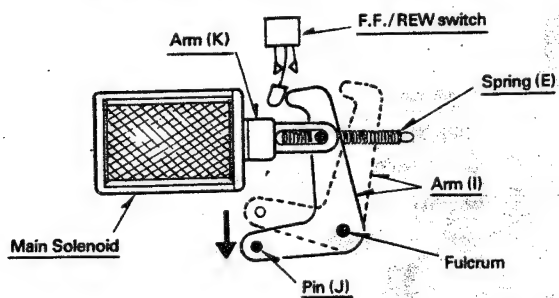



Fig. 14

2. The Head Base moves downward, as shown in Fig. 15, and is locked by Arm (J) and the Roller mounted on the Head Base. In F.F./REWIND and Ejection, Lever (I) moves left to disengage Arm (J) so that the Head Base is unlocked for return to its normal position by Spring (D).

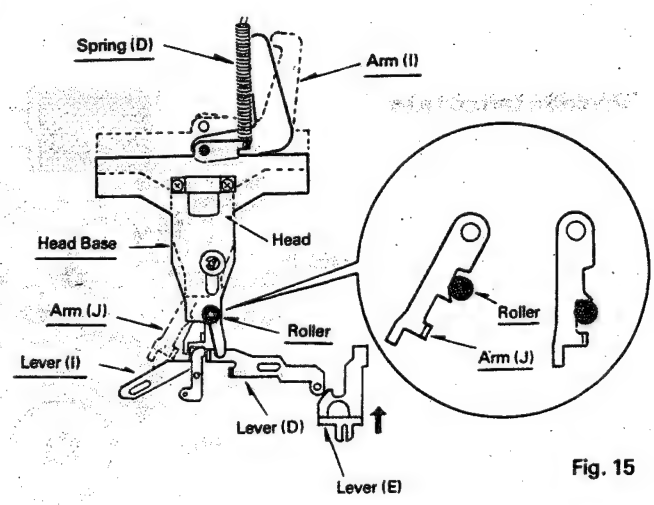



Fig. 15

### • Auto Reverse mechanism (Fig. 16 and 17)

1. When the sensing mechanism is activated with the Head Base advanced, the pin at the end of the main solenoid causes Arm (O) to rotate so that Lever (H) is attracted.
2. Lever (H) engages either Pin (K) or (L), attached to Arm (L), to cause Arm (L) to rotate. Pin (L) engages the groove of Cam (F), so that Cam (F) moves right and left to rotate Arm (N) and cause the Arm (E) to move vertically, and stop the rotation on either side of the Reel Units.
3. Cam (F) contacts Pin (M), which is attached to the Pinch Roller Unit. Pin (M), through the pressure of Spring (G), with the claw protruding toward the Head Base as its stopper, is provided with constant downward force.
4. Pin (M), via Cam (F), moves vertically to control the contact of the Capstan on one side with the Pinch Roller.
5. Spring (F), mounted to the rotating shaft of Arm (L) via the protrusion (A) of Arm (L), rotates in the same direction as Arm (L) to store sufficient force to move Arm (M).
6. Said force, when Lever (H) rotates Arm (L) and is returned to its normal position (when the Lever (H) engages neither Pin (L) or (K), affects the oval hole on Lever (H) to incline the Lever (H) toward the opposite side.

**NORMAL DIRECTION**

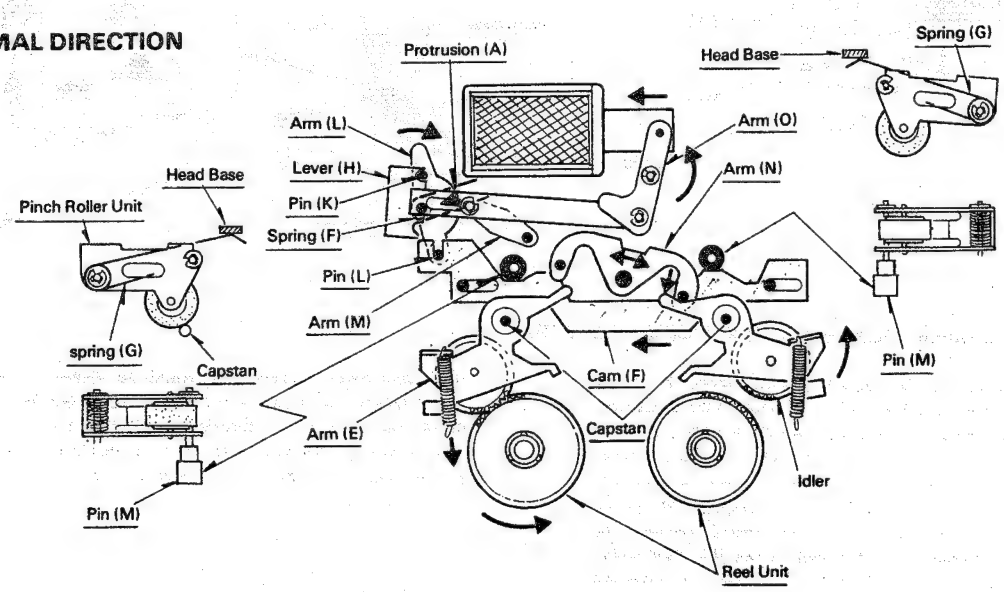



Fig. 16

**REVERSE DIRECTION**

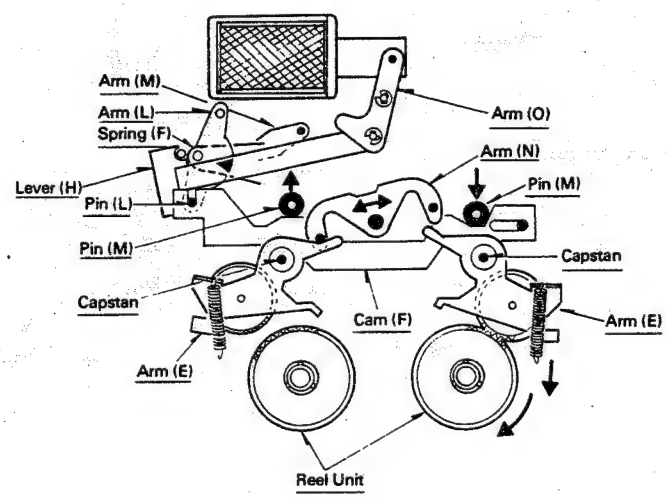



Fig. 17

7. Pin (K) of Arm (L), which engages Arm (P), acts to operate the head selector switch, thus activating the Auto Reverse mechanism in the manner described above (Fig. 18).

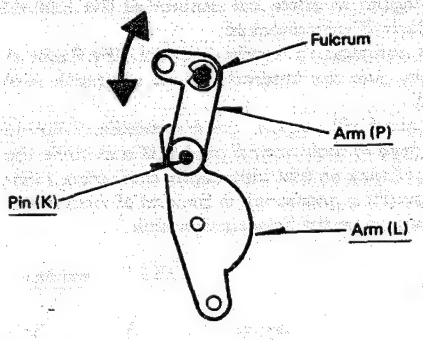



Fig. 18

## • F.F./REWIND mechanism (CX-118SM, 118SV, 118SM/A, 118SV/A)

1. The left-right movement of Crank causes right-left movements of Cam (G). Lever (A) is pushed by the tapered sections at both ends of the upper side of Cam (G) (Fig. 19).

2. Lever (A) causes Arm (E) to rotate and separate the idle gear on one side from the Reel Units, simultaneously making Lever (B) rotate and disengage Claws (A) and (B), which are designed to prevent the Reel Units from reversing (Fig. 19).

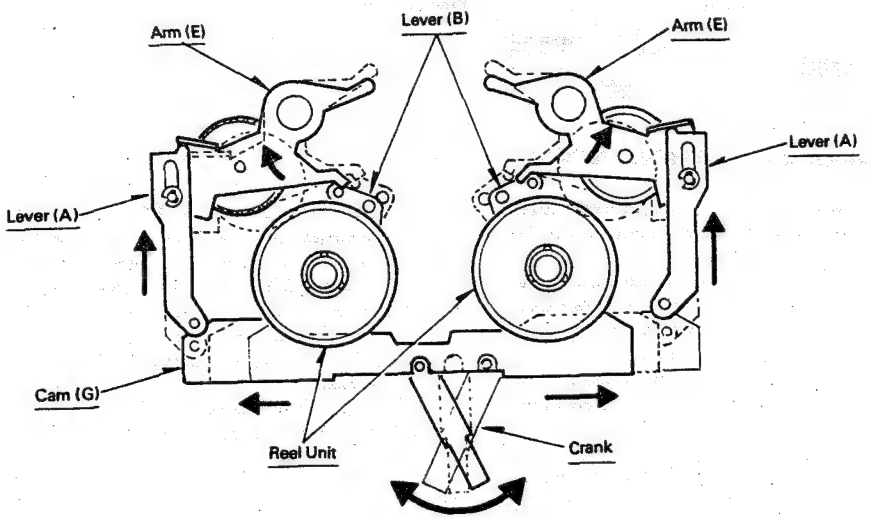



Fig. 19

3. With Cam (G) moving right or left, Arm (Q), through the pressure of Spring (H), is pushed toward the upper side in the figure to strike the bottom of the tapered section of Cam (G) and is locked.
4. With Crank returned to center position, the Roller of Arm (Q) rolls over the tapered section to unlock Arm (Q) (Fig. 20).
5. With this, Levers (C) and (J), under pressure of Spring (I), are returned to their normal positions and strike the protrusion of Crank so that their center position is maintained. Roller (C) is positioned at the end of Arm (Q) to force it downward in the figure and unlock.
6. Shifting of Crank during PLAY causes the protrusion of Lever (C) to push Arm (J), so that the Head Base is unlocked.
7. Also, with Eject Lever (E) pushed, Lever (C), through Roller (B), moves left to unlock the Head Base.
8. At the end of F.F./REWIND, the sensing mechanism is activated and advances the Head Base, with the result Arm (Q) is pushed toward the lower side in the figure by the end of the Head Base to bring F.F./REWIND to a stop (Fig. 20).

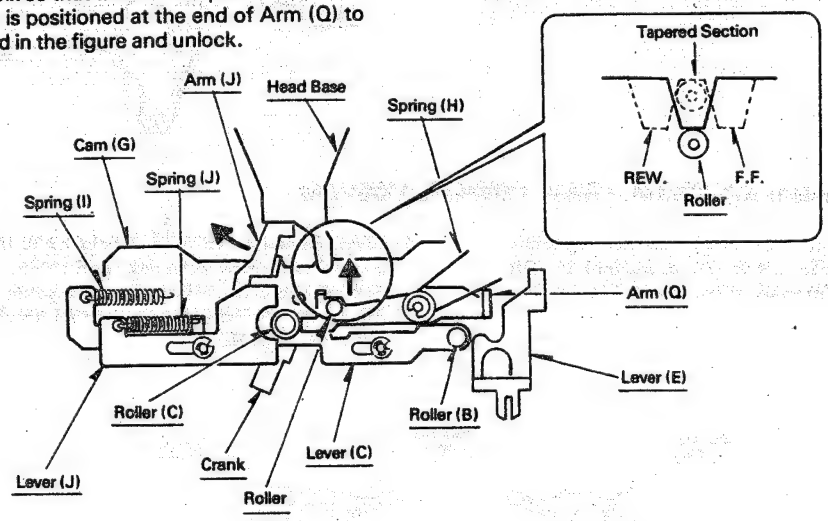



Fig. 20

## • F.F./REWIND mechanism (CX-118FV, 118FV/A)

1. When the Sub Solenoid in Fig. 21 is activated, Lever (L) which is coupled with the Sub Solenoid and Pin (N) is attracted.
2. Lever (L) causes Arm (E) to rotate, the Idle Gear is disengaged from the Reel Unit, Lever (B) is simultaneously made to rotate, and Claws (A) and (B) for preventing the Reel Unit from reversing are freed.
3. When Lever (L) is attracted, Lever (I) moves in the direction of the arrow via Arm (H), Arm (J) is attracted and the Head Base is released.
4. When the Sub Solenoid in Fig. 22 is activated, Lever (K) which is coupled with the Sub Solenoid and Pin (N) is attracted.
5. Lever (K) causes Arm (E) to rotate, the Idle Gear is disengaged from the Reel Unit, Lever (B) is simultaneously made to rotate, and Claws (A) and (B) for preventing the Reel Unit from reversing are freed.
6. When Lever (K) is attracted, Lever (I) moves in the direction of the arrow via Arm (S), Lever (J) and Arm (R), Arm (K) is depressed, and the Head Base is released.
7. The above operations permit the tape to be set to the F.F. and REWIND modes.

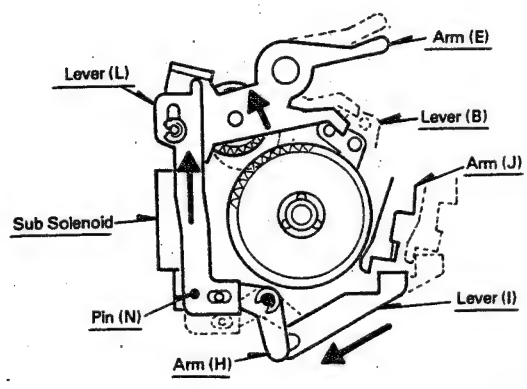



Fig. 21

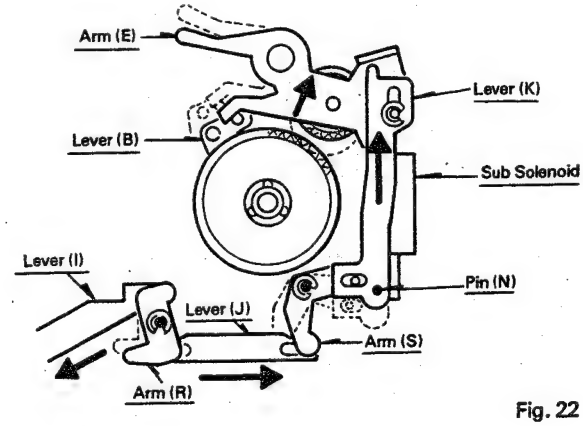



Fig. 22

### • Sensing mechanism deactivator (CX-118SM, 118SV, 118SM/A, 118SV/A)

With Eject Lever (E) pushed, Arm (T), through the pressure of Spring (K), moves in the direction shown by arrow in the figure and pushes Arm (G) so that the sensing mechanism is deactivated. With Eject Lever (E) returned to its normal position, Arm (T), through Arm (S), is separated from Arm (G) (Fig. 23).

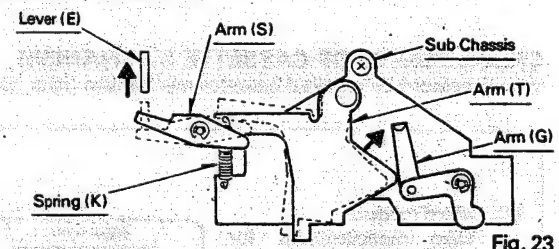



Fig. 23

### • Sensing mechanism deactivator (CX-118FV, 118FV/A)

With Eject Lever (E) pushed, Arm (T), through the pressure of Spring (K), moves in the direction shown by arrow in the figure and pushes Arm (G) so that the sensing mechanism is deactivated. With Eject Lever (E) returned to its normal position, Arm (T), through Lever (D), is separated from Arm (G) (Fig. 24)

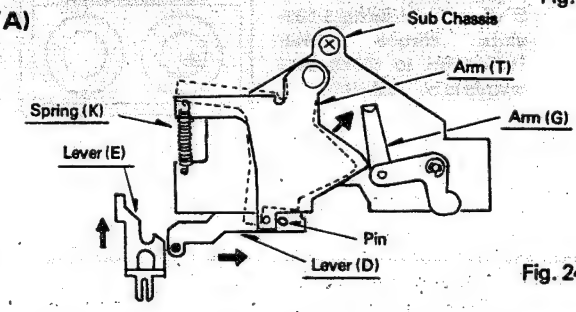



Fig. 24

# ADJUSTMENT

### TAPE SPEED ADJUSTMENT (CX-118SM, ~~118SV~~, 118SM/A, ~~118SV/A~~)

Tape speed can be adjusted by replacing the motor pulley. Three types of pulleys differing in diameter available as shown in the table below. The pulley surface has either one groove, two grooves or no groove to help distinguish the diameter (Fig. 25).

| Diameter | Parts No. | No. of Grooves |
|---|---|---|
| 11.59 mm | CXB-996 | None |
| 11.72 mm | CXB-997 | One |
| 11.85 mm | CXB-998 | Two |

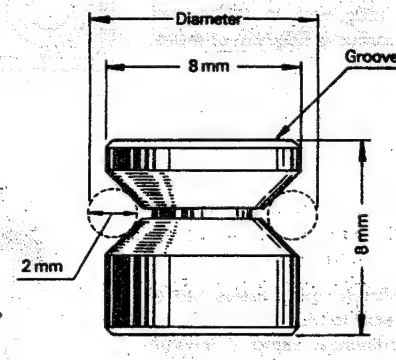



Fig. 25

### TAPE SPEED ADJUSTMENT (CX-118FV, 118FV/A)

The tape speed can be adjusted by increasing or reducing the resistance of the semi-fixed resistor. When the semi-fixed resistor in the figure is rotated clockwise, this speed is increased; when it is rotated counterclockwise, it is reduced. (Fig. 26).

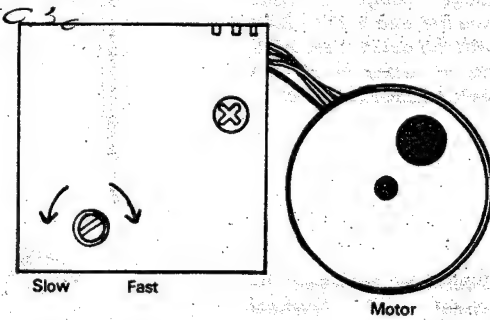



Fig. 26

### AZIMUTH ADJUSTMENT

1. Connect VTVM and the speaker (4Ω) to the green and gray leads, respectively. Connect the red lead to a DC regulated power supply and apply 13.8V.
2. Insert a 333 Hz (STD-341) test tape. With balance set at medium and tone at maximum, turn volume for an output reading of 0 dB.
3. Insert a 10 kHz (STD-341) test tape.
4. Turn the azimuth adjusting screw so the outputs of Lch and Rch are maximized symmetrically both in normal and reverse directions (Fig. 27).

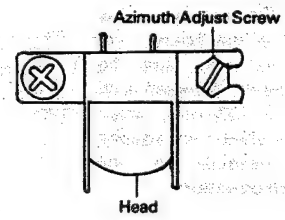
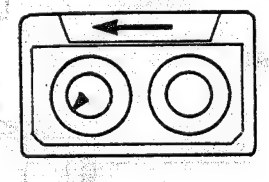



Fig. 27

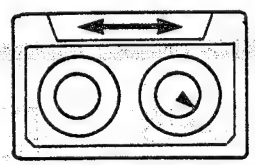
## CHECK POINTS OF CASSETTE MECHANISM

When replaced or repaired cassette mechanism parts, refer to values in the following table.

**(1) Wind torque**
Take measurement for 5~6 seconds using a cassette torque meter (120g/cm) to make sure torque is 50~70g/cm.

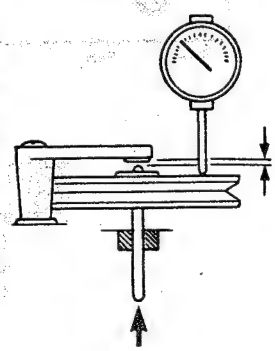


**(2) F.F. and rewind torque**
Take measurement for 5~6 seconds using a cassette torque meter (120g/cm) to make sure torque is 50g/cm or more.

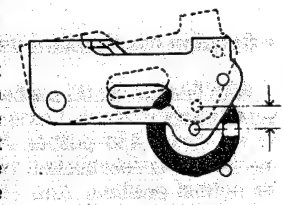


**(3) Pinch roller press adhesion force**
Measure using a tension gauge (500g) to make sure the load is 210~290g with the pinch roller starting to rotate in contact with the capstan shaft.

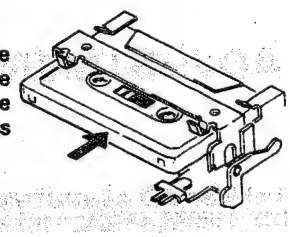
**(4) Clearance between flywheel and flywheel bracket**
Set a dial pick gauge as shown in the figure, and check to make sure the difference is between 0.05 mm and 0.25 mm, when the flywheel is applied with pressure in the arrowed direction.



**(5) Pinch roller travel**
Use a slide calipers to ascertain that the distance between the position of the center shaft at the time the pinch roller contacts the capstan and that at the time the capstan has gone away from the pinch roller should be at least 0.8 mm when the tape is playing in the reverse direction and at least 4.3 mm when it is F.F./REWIND.

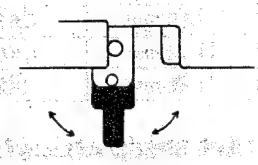


**(6) Cassette loading force**
Using tension gauge (1 kg) at the center of the cassette, check to make sure the indication is less than 600 g.

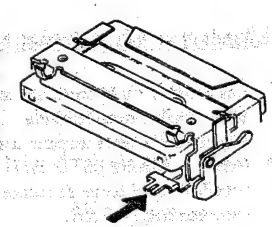


**(CX-118SM, 118SV, 118SM/A, 118SV/A)**

**(7) F.F./REWIND set and release force**
With a tension guage (1 kg) pushed in the arrowed direction, make sure F.F./REWIND will lock at less than 800 g and release at less than 600 g.



**(8) Eject force**
Using tension gauge (3 kg) in the arrowed direction, check to make sure the indication is less than 3 kg.



# SCHEMATIC CIRCUIT DIAGRAM (CX-118SM, 118SM/A)

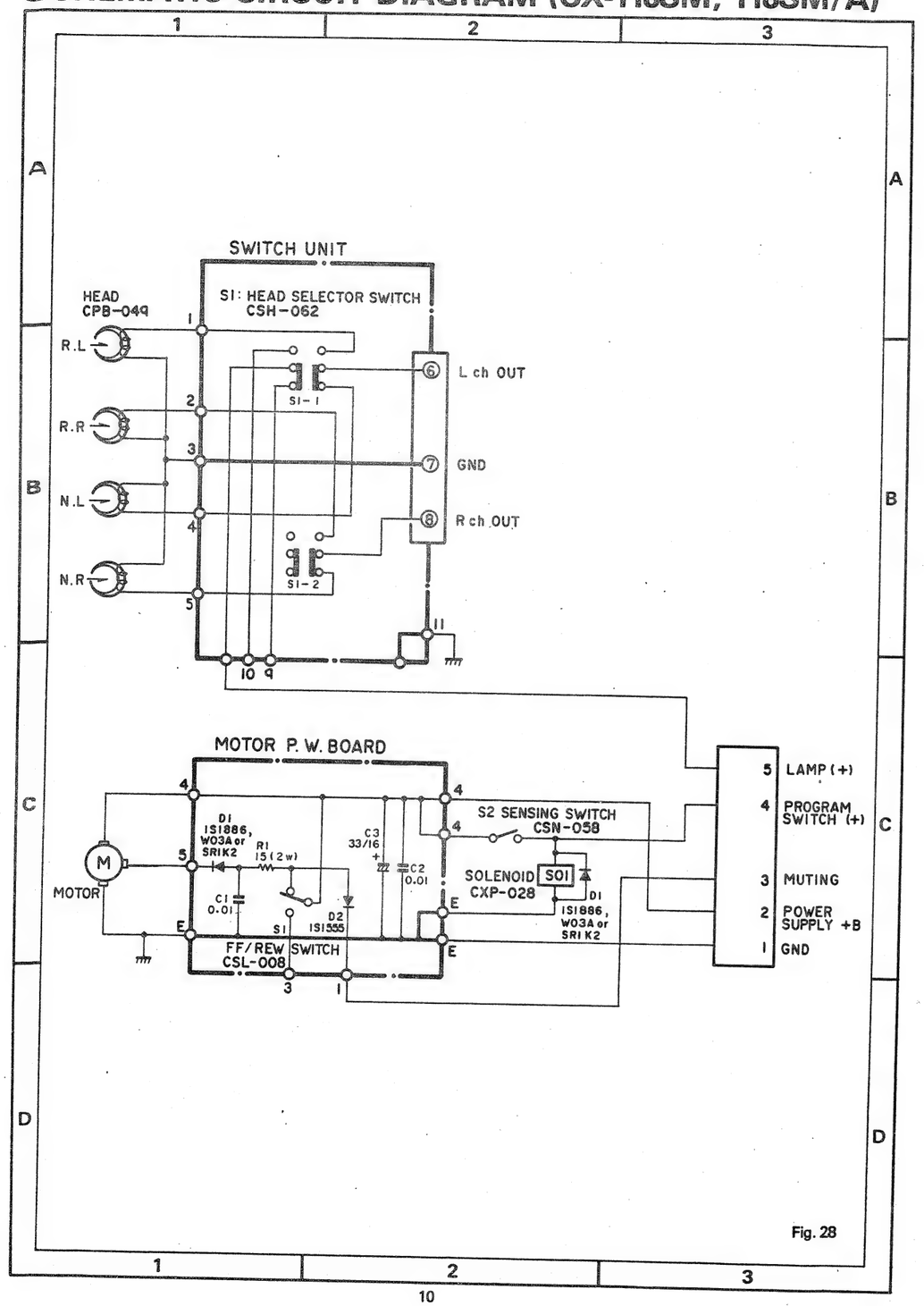



Fig. 28



# CONNECTION DIAGRAM (CX-118SM, 118SM/A)



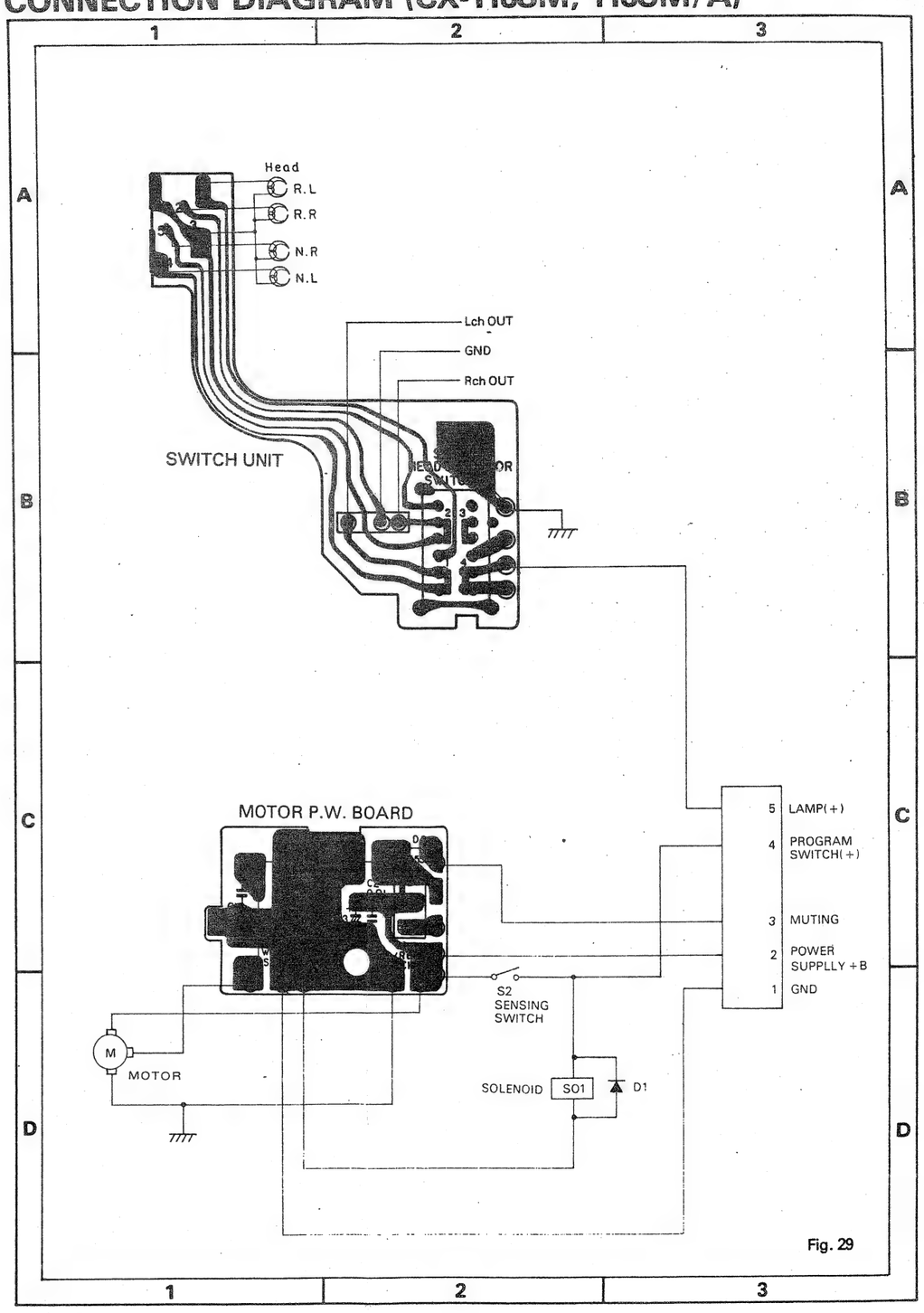
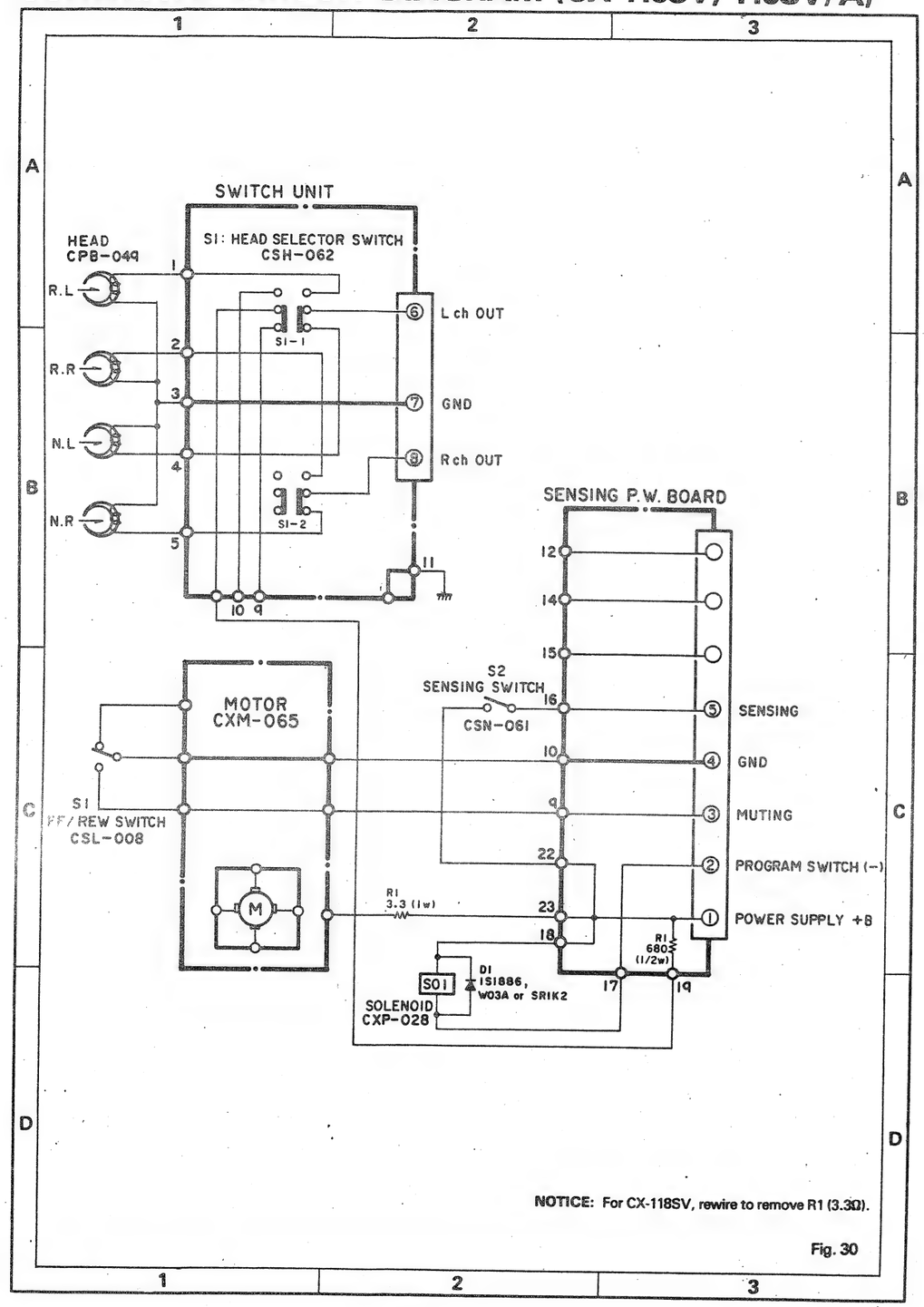



Fig. 29

# SCHEMATIC CIRCUIT DIAGRAM (CX-118SV, 118SV/A)




NOTICE: For CX-118SV, rewire to remove R1 (3.3Ω).

Fig. 30



# ONNECTION DIAGRAM (CX-118SV, 118SV/A)

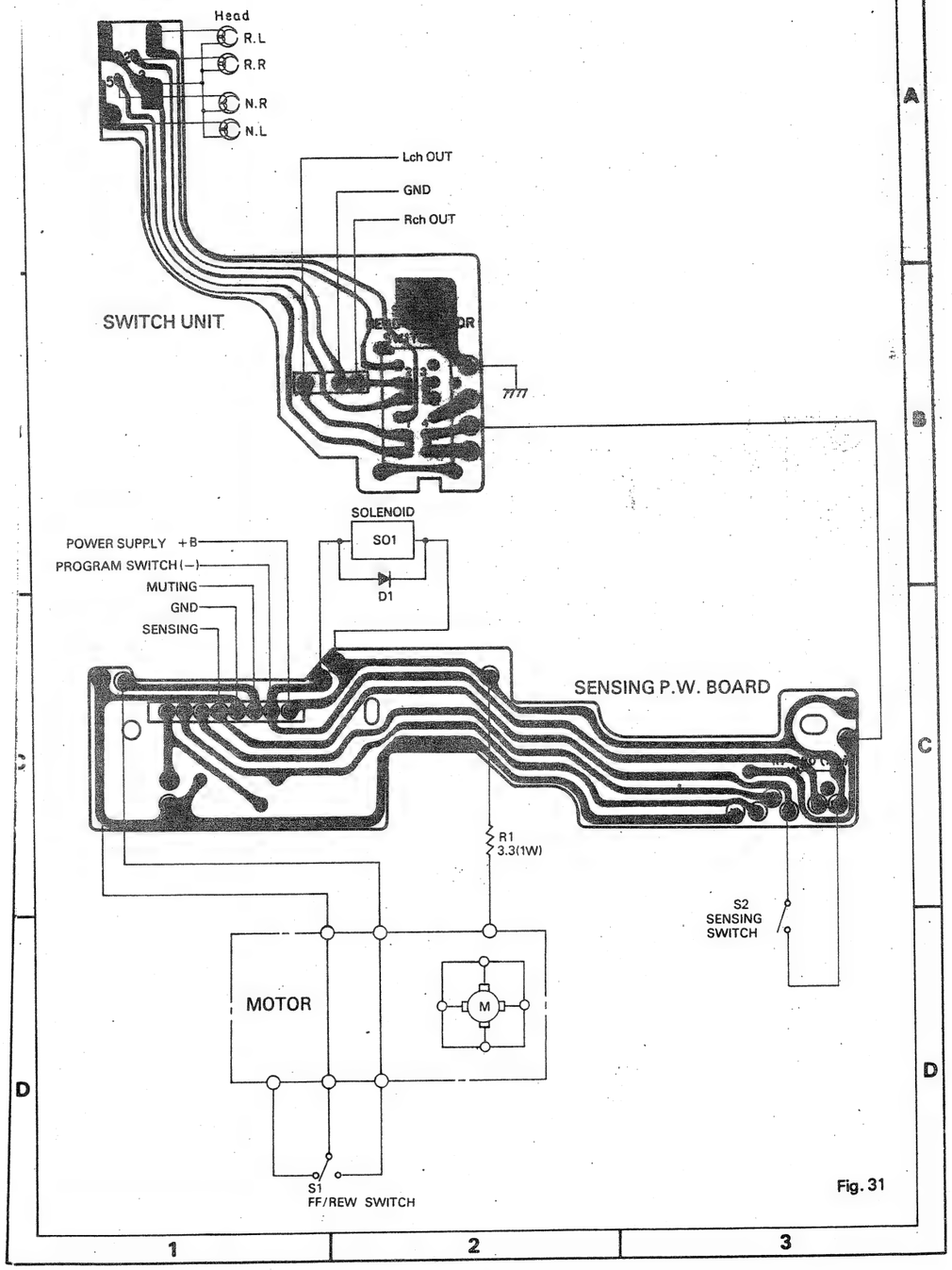
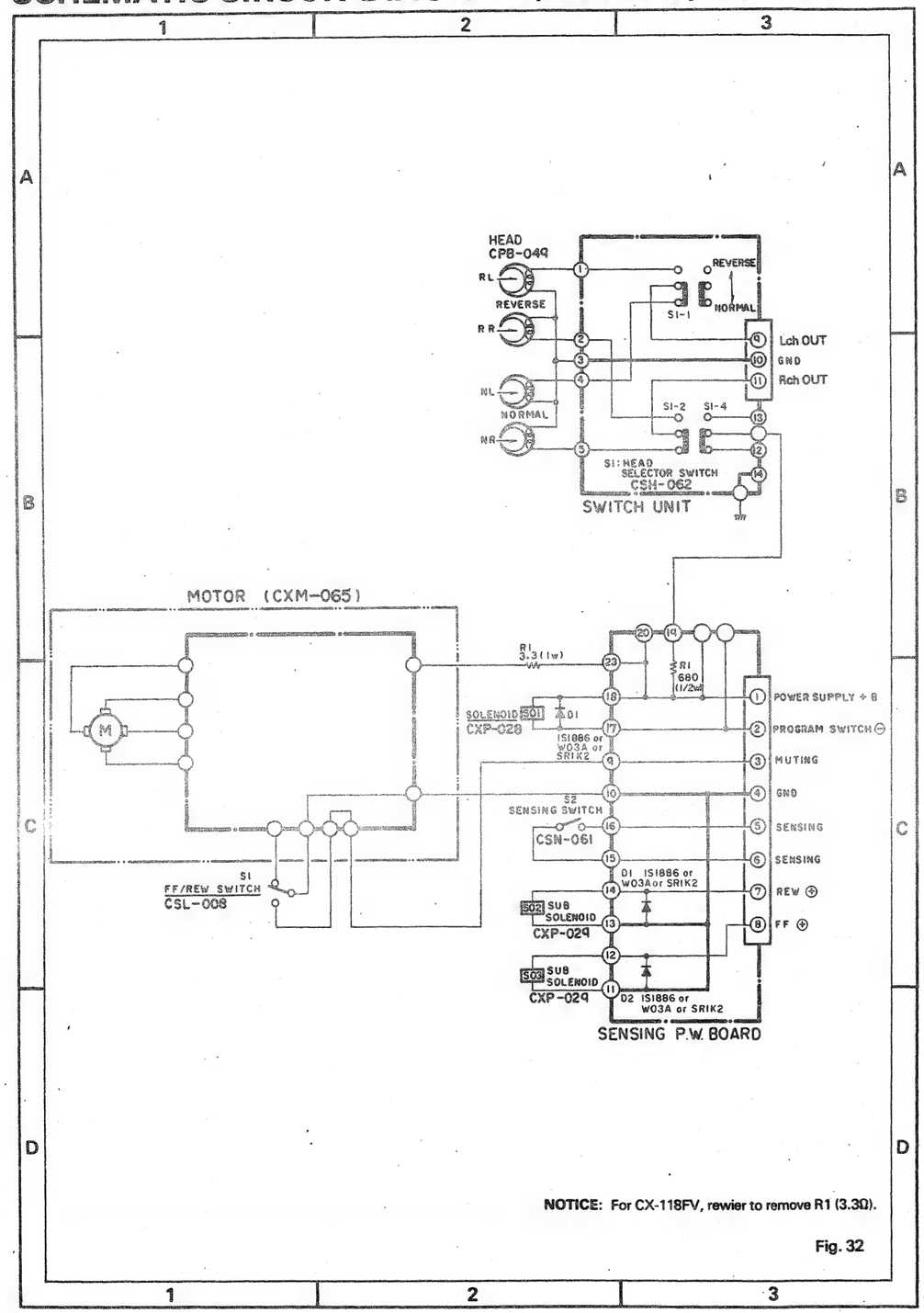



Fig. 31

# SCHEMATIC CIRCUIT DIAGRAM (CX-118FV, 118FV/A)




**NOTICE:** For CX-118FV, rewier to remove R1 (3.3Ω).

Fig. 32



# CONNECTION DIAGRAM (CX-118FV, 118FV/A)



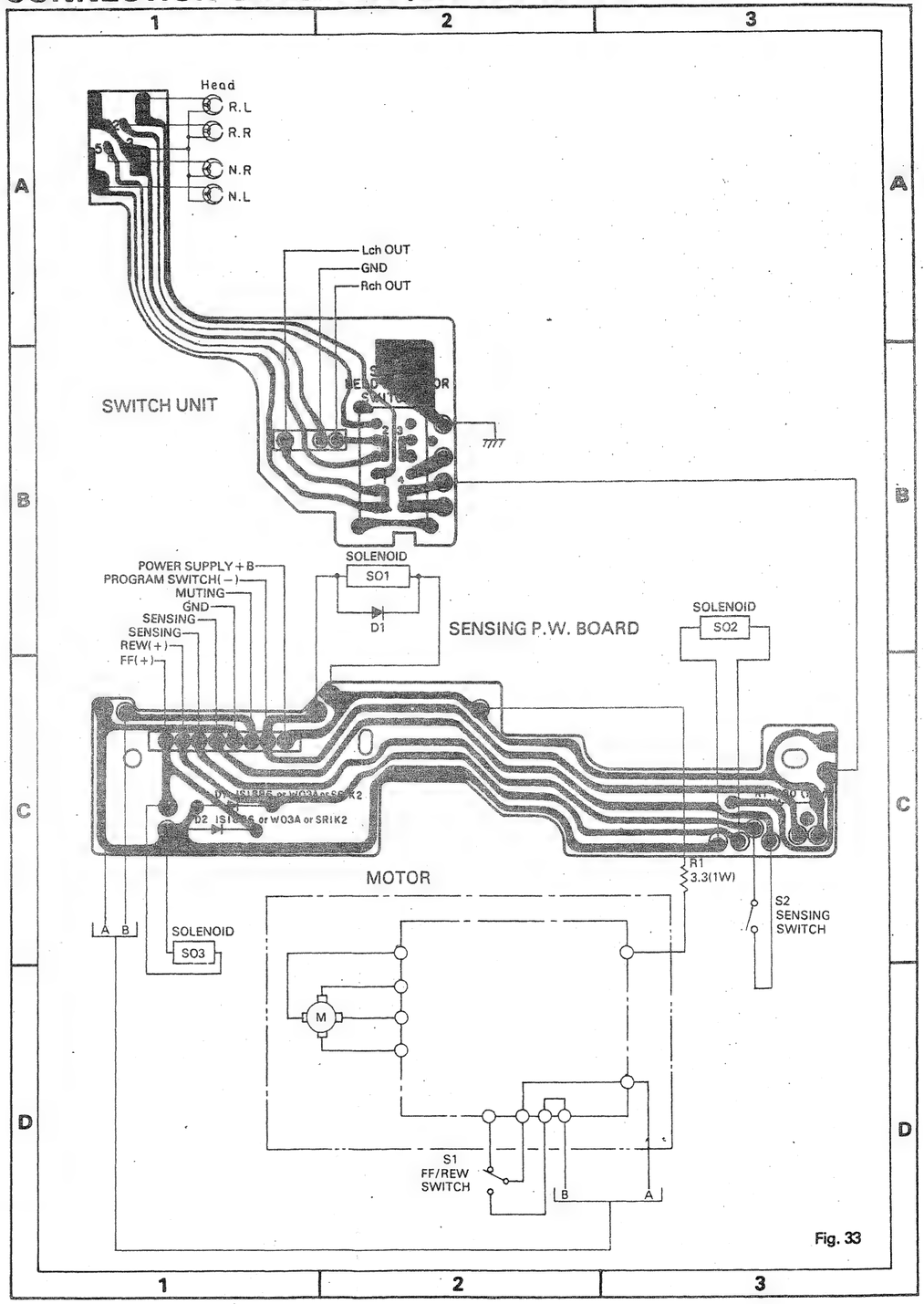



Fig. 33

# EXPLODED VIEW (TOP)(CX-118SM,118SV,118SM/A,118SV/A)

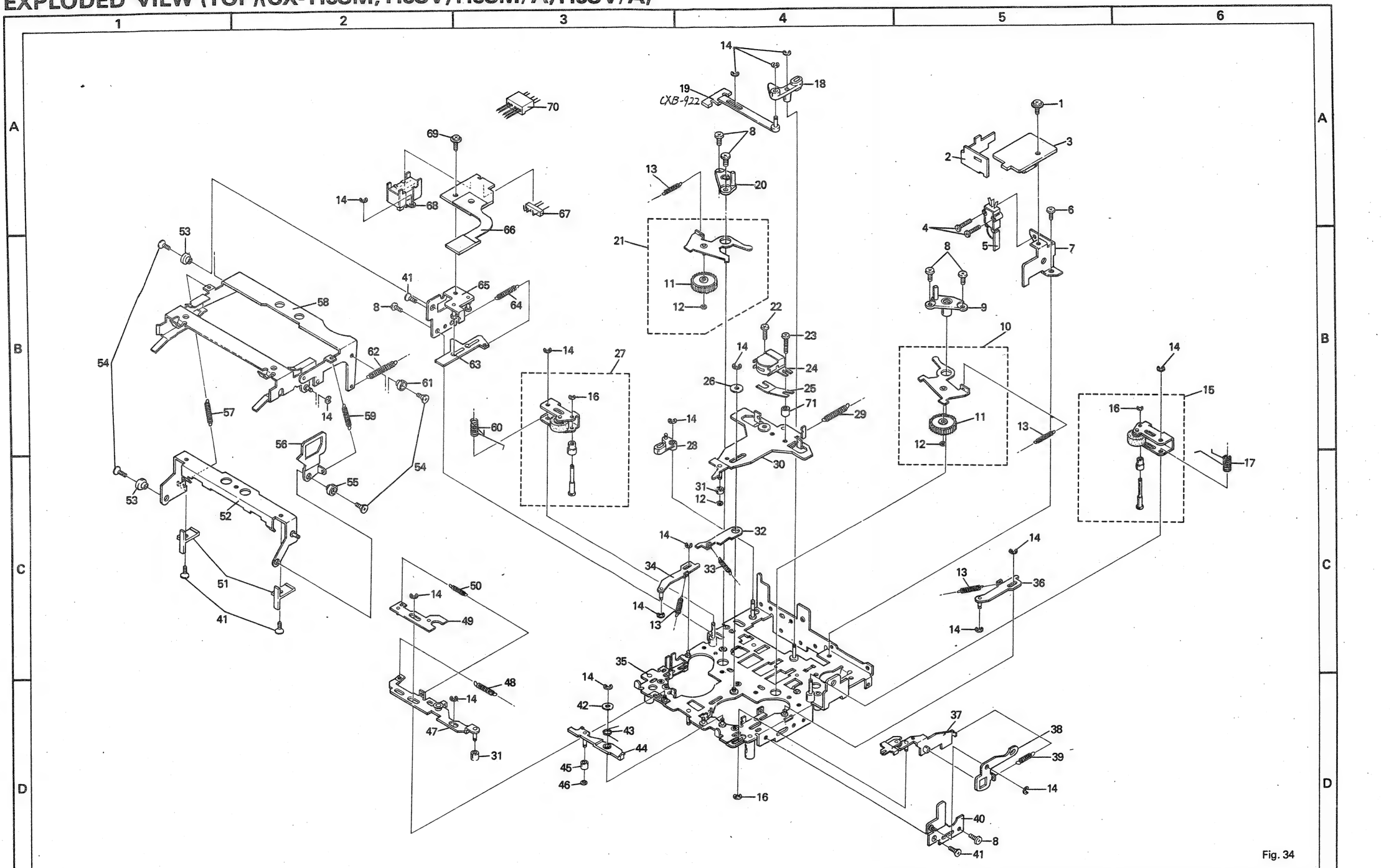



Fig. 34

# EXPLODED VIEW (BOTTOM)(CX-118SM,118SV,118SM/A,118SV/A)



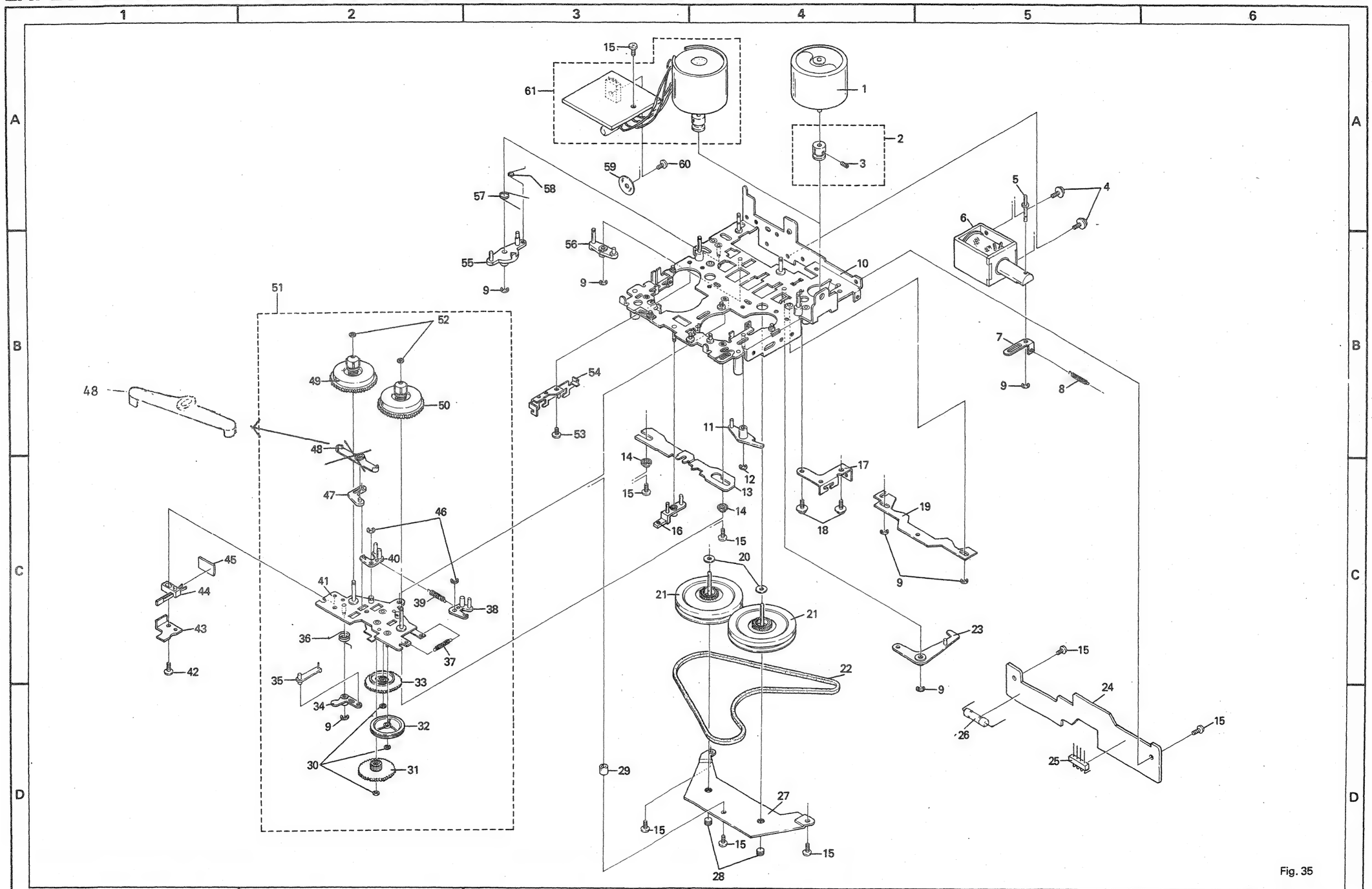



Fig. 35

# EXPLODED VIEW (TOP)(CX-118FV, 118FV/A)



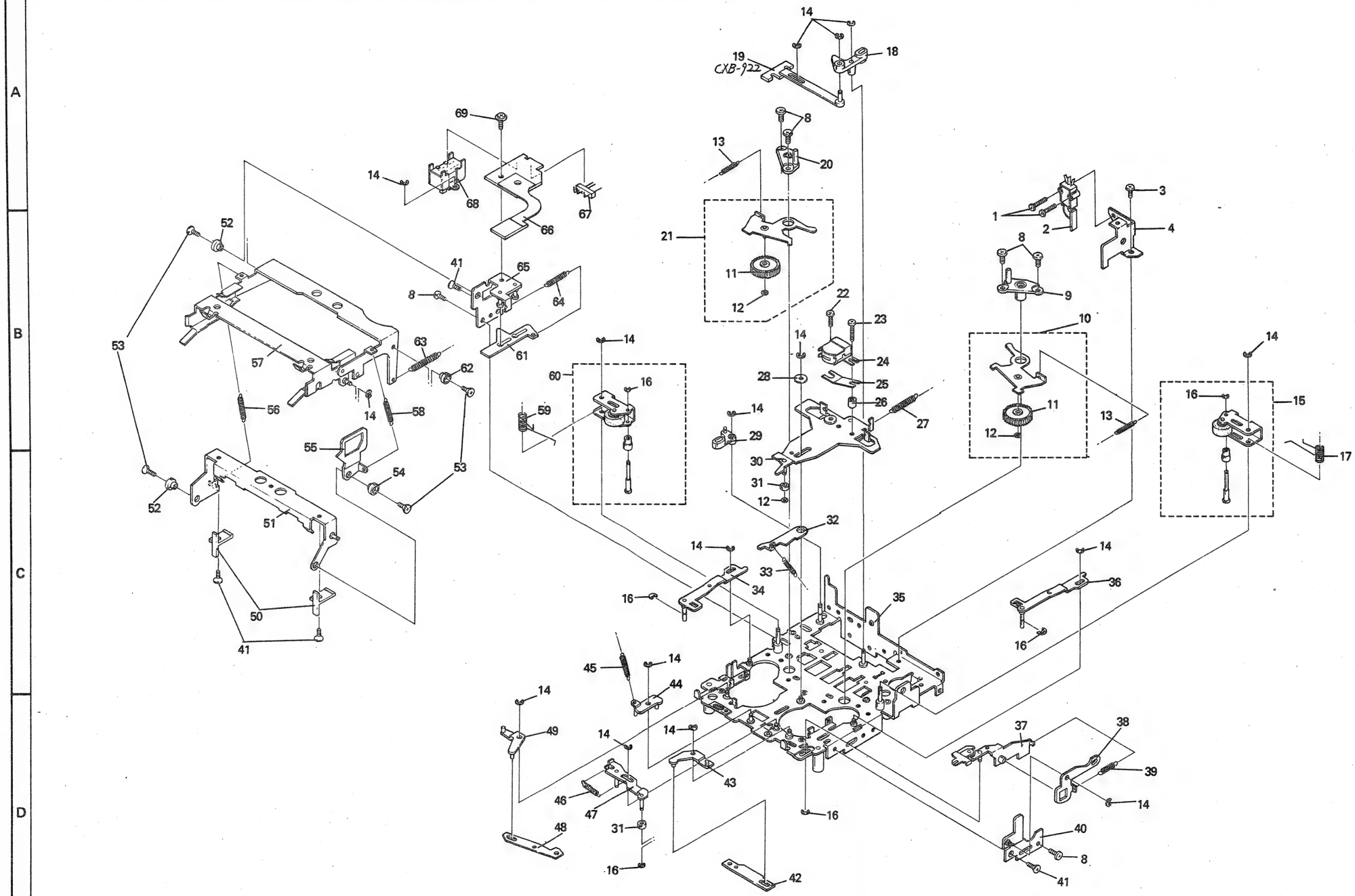



Fig. 36

# EXPLODED VIEW (BOTTOM)(CX-118FV, 118FV/A)

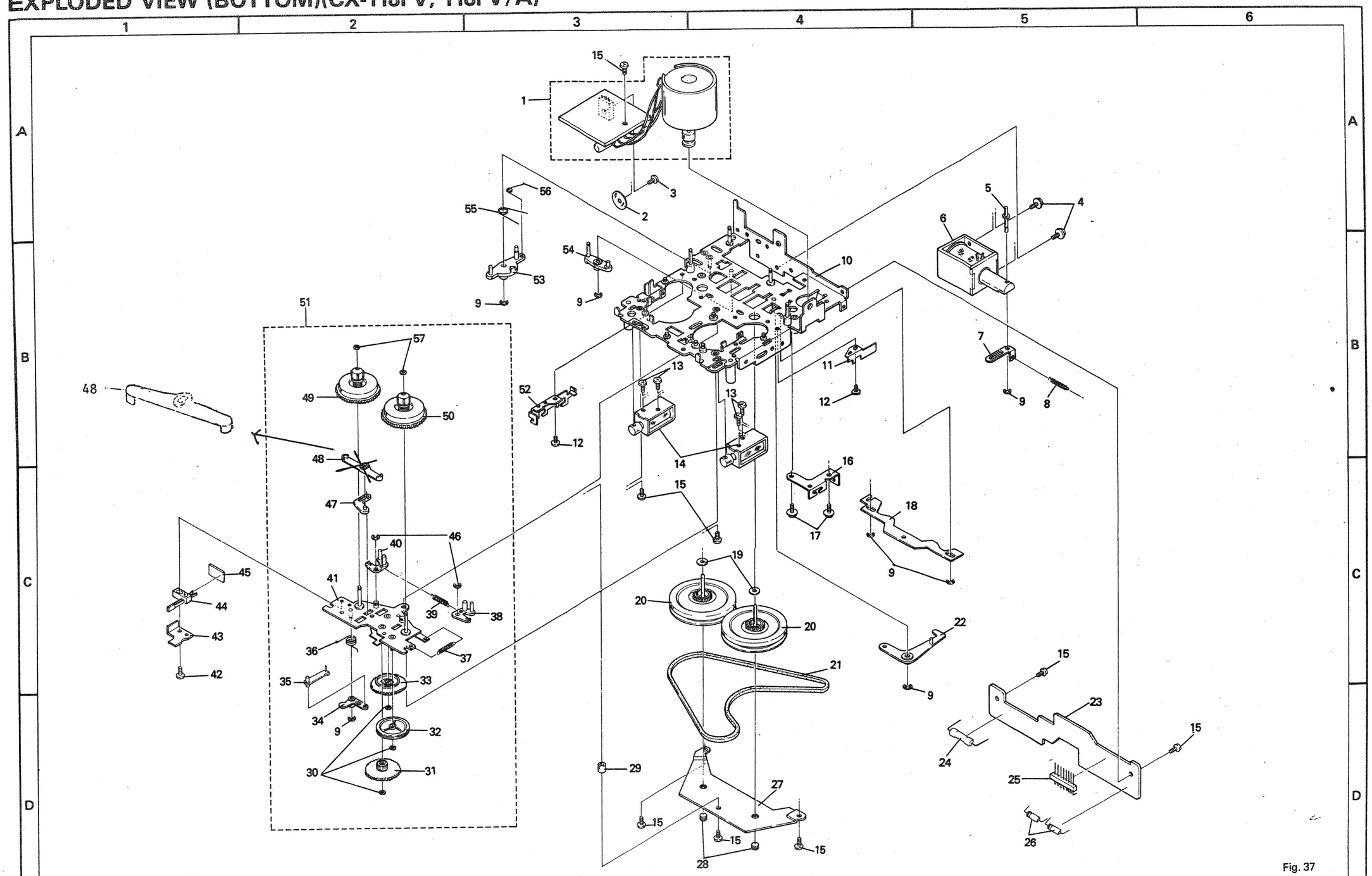



Fig. 37

### Switch Unit

| Part No. | Symbol & Description | |
|---|---|---|
| CSH-062 | S1 | switch |

### Sensing P.W. Board

| Part No. | Symbol & Description | |
|---|---|---|
| 1S1886 or W03A or SR1K2 | D1, D2 | (CX-118FV, 118FV/A) |
| RD1/2PS681J | R1 | |

### Motor P.W. Boad (CX-118SM, 118SM/A)

| Part No. | Symbol & Description |
|---|---|
| 1S1886 or W03A or SR1K2 | D1 |
| 1S1555 | D2 |
| CKDYF103Z25 | C1, C2 |
| CEA330P16 | C3 |
| RS2P150J | R1 |

### Miscellaneous Parts List

**NOTICE:**
**For CX-118SV, 118FV, rewire to remove R1 (3.3Ω).**

| Part No. | Symbol & Description | |
|---|---|---|
| 1S1886 or W03A or SR1K2 | D1 | |
| RN1P3R3K or RN1P3R3J | R1 | (CX-118SV/A, 118FV/A) |
| CSL-008 | S1 | Switch |
| CSN-058 | S2 | Switch (CX-118SM, 118SM/A) |
| CSN-061 | S2 | Switch (CX-118SV, 118SV/A, 118FV, 118FV/A) |
| CXM-059 | M | Motor (CX-118SM, 118SM/A) |
| CXM-065 | M | Motor (CX-118SV, 118SV/A, 118FV, 118FV/A) |
| CPB-049 | HD | Head |
| CXP-028 | SO1 | Solenoid |
| CXP-029 | SO2, SO3 | Solenoid (CX118FV, 118FV/A) |

**NOTICE:**
**Parts whose parts numbers are omitted are subject to being not supplied.**

### Exploded View (Top) (CX-118SM, 118SV, 118SM/A, 118SV/A)

| Key No. | Part No. | Description |
|---|---|---|
| 1. | CBA-076 | Screw, M2.6 × 6 (CX-118SM, 118SM/A) |
| 2. | | Shield (CX-118SM, 118SM/A) |
| 3. | | P.W.Board (CX-118SM, 118SM/A) |
| 4. | B10-805-A | BM2 × 8 |
| 5. | CSL-008 | Switch |
| 6. | B10-900-A | BM2.6 × 3 |
| 7. | | Bracket |
| 8. | B10-809-A | BM2.6 × 4 |
| 9. | CNR-128 | Bearing |
| 10. | CXB-843 | Gear Unit |
| 11. | CNV-950 | Gear |
| 12. | CBF-045 | Washer |
| 13. | CBH-524 | Spring |
| 14. | B20-101-B | EW2φ × 0.4t |
| 15. | CXB-993 | Pinch Roller Unit |
| 16. | B20-111-B | EW1.5φ × 0.4t |
| 17. | CBH-560 | Spring |
| 18. | CNV-947 | Arm |
| 19. | CXB-922 | Lever Unit |
| 20. | CNR-129 | Bearing |
| 21. | CXB-844 | Gear Unit |
| 22. | B06-602-A | Screw, M2 × 4 |
| 23. | CBA-082 | Screw, M2 × 8 |
| 24. | CPB-049 | Head |
| 25. | CBL-178 | Spring |
| 26. | CBE-065 | Washer |
| 27. | CXB-994 | Pinch Roller Unit |
| 28. | CNV-987 | Arm |
| 29. | CBH-528 | Spring |
| 30. | CXB-847 | Head Base |
| 31. | CLA-831 | Roller |
| 32. | | Cam |
| 33. | CBH-529 | Spring |
| 34. | CXB-855 | Lever Unit |
| 35. | | Chassis Unit |
| 36. | CXB-854 | Lever Unit |
| 37. | CXB-861 | Lever Unit |
| 38. | | Arm |
| 39. | CBH-536 | Spring |
| 40. | CXB-862 | Bracket Unit |
| 41. | B10-609-A | CM2.6 × 4 |
| 42. | CBF-111 | Washer |
| 43. | CBH-533 | Spring |
| 44. | | Arm |
| 45. | CLA-863 | Roller |
| 46. | CBF-088 | Washer |
| 47. | CXB-856 | Lever Unit |
| 48. | CBH-547 | Spring |
| 49. | CXB-903 | Lever Unit |
| 50. | CBH-534 | Spring |
| 51. | | Guide |
| 52. | CXB-969 | Arm Unit |
| 53. | CLA-845 | Bush |
| 54. | B10-611-A | CM2.6 × 6 |
| 55. | CLA-844 | Bush |
| 56. | | Arm |
| 57. | CBH-535 | Spring |
| 58. | CXB-971 | Holder Unit |





| Key No. | Part No. | Description |
|---|---|---|
| 59. | CBH-542 | Spring |
| 60. | CBH-561 | Spring |
| 61. | CLA-~~938~~ 824 | Bush |
| 62. | CBH-532 | Spring |
| 63. | CNV-988 | Lever |
| 64. | CBH-537 | Spring |
| 65. | CXB-858 | Bracket Unit |
| 66. | CNP-697 | P.W.Board |
| 67. | CKS-052 | Plug |
| 68. | CSH-062 | Switch |
| 69. | CBA-076 | Screw, M2.6 × 6 |
| 70. | CDE-545 | Connector (CX-118SM, 118SM/A) |
| 71. | CNW-064 | Rubber |

### Exploded View (Bottom) (CX-118SM, 118SV, 118SM/A, 118SV/A)

| Key No. | Part No. | Description |
|---|---|---|
| 1. | CXM-059 | Motor (CX-118SM, 118SM/A) |
| 2. | CXB-996 | Pulley Unit (CX-118SM, 118SM/A) |
| | CXB-997 | |
| | CXB-998 | |
| 3. | B03-008-A | SF2.6 × 4 (CX-118SM, 118SM/A) |
| 4. | B06-609-B | Screw, M2.6 × 4 |
| 5. | CLA-825 | Shaft |
| 6. | CXP-028 | Solenoid |
| 7. | | Arm |
| 8. | CBH-527 | Spring |
| 9. | B20-101-B | EW2φ × 0.4t |
| 10. | | Chassis Unit |
| 11. | CNW-029 | Arm |
| 12. | B20-111-B | EW1.5φ × 0.4t |
| 13. | | Cam |
| 14. | CLA-851 | Collar |
| 15. | B10-809-A | BM2.6 × 4 |
| 16. | | Crank |
| 17. | | Bracket |
| 18. | B06-696-A | Screw, M2.6 × 3 |
| 19. | | Cam |
| 20. | CBF-111 | Washer |
| 21. | CNR-130 | Flywheel |
| 22. | CNT-072 | Belt |
| 23. | CXB-849 | Arm Unit |
| 24. | CNP-698 | P.W.Board (CX-118SV, 118SV/A) |
| 25. | CKS-070 | Plug (CX-118SV, 118SV/A) |
| 26. | RD1/2PS681J | Resistor (CX-118SV, 118SV/A) |
| 27. | | Holder |
| 28. | CNV-984 | Screw |
| 29. | CLA-817 | Collar |
| 30. | CBF-046 | Washer |
| 31. | CNV-955 | Gear |
| 32. | CNV-954 | Pulley (CX-118SM, 118SM/A) |
| | CLA-914 | Pulley (CX-118SV, 118SV/A) |
| 33. | CNV-956 | Gear |
| 34. | CNV-962 | Lever |
| 35. | CNV-959 | Arm |
| 36. | CBH-521 | Spring |
| 37. | CBH-548 | Spring |
| 38. | CNV-960 | Lever |
| 39. | CBH-520 | Spring |
| 40. | CNV-961 | Lever |
| 41. | CXB-829 | Sub Chassis Unit |
| 42. | B10-805-A | BM2 × 8 |
| 43. | | Cover |
| 44. | CSN-058 | Switch (CX-118SM, 118SM/A) |
| | CSN-061 | Switch (CX-118SV, 118SV/A) |
| 45. | | P.W.Board |
| 46. | B20-103-B | EW2.5φ × 0.4t |
| 47. | CNV-958 | Lever |
| 48. | CNV-957 | Arm |
| 49. | CXB-833 | Reel Unit |
| 50. | CXB-832 | Reel Unit |
| 51. | CXB-860 | Sub Chassis Assy (CX-118SM, 118SM/A) |
| | CXB-977 | Sub Chassis Assy (CX-118SV, 118SV/A) |
| 52. | CBF-045 | Washer |
| 53. | B10-900-A | BM2.6 × 3 |
| 54. | | Bracket |
| 55. | | Arm |
| 56. | | Arm |
| 57. | CBH-526 | Spring |
| 58. | CBH-525 | Spring |
| 59. | CNM-513 | Insulator (CX-118SV, 118SV/A) |
| 60. | B10-811-A | BM2.6 × 6 (CX-118SV, 118SV/A) |
| 61. | CXM-065 | Motor (CX-118SV, 118SV/A) |

## Exploded View (Top)(CX-118FV, 118FV/A)

| Key No. | Part No. | Description |
|---|---|---|
| 1. | B10-805-A | BM2 × 8 |
| 2. | CSL-008 | Switch |
| 3. | B10-900-A | BM2.6 × 3 |
| 4. | | Bracket |
| 5~7. | VACANT | |
| 8. | B10-809-A | BM2.6 × 4 |
| 9. | CNR-128 | Bearing |
| 10. | CXB-843 | Gear Unit |
| 11. | CNV-950 | Gear |
| 12. | CBF-045 | Washer |
| 13. | CBH-524 | Spring |
| 14. | B20-101-B | EW2$\phi$ × 0.4t |
| 15. | CXB-993 | Pinch Roller Unit |
| 16. | B20-111-B | EW1.5$\phi$ × 0.4t |
| 17. | CBH-560 | Spring |
| 18. | CNV-947 | Arm |
| 19. | | Lever |
| 20. | CNR-129 | Bearing |
| 21. | CXB-844 | Gear Unit |
| 22. | B06-602-A | Screw, M2 × 4 |
| 23. | CBA-082 | Screw, M2 × 8 |
| 24. | CPB-049 | Head |
| 25. | CBL-178 | Spring |
| 26. | CNW-064 | Rubber |
| 27. | CBH-528 | Spring |
| 28. | CBE-065 | Washer |
| 29. | CNV-987 | Arm |
| 30. | CXB-847 | Head Base |
| 31. | CLA-831 | Roller |
| 32. | | Cam |
| 33. | CBH-529 | Spring |
| 34. | CXB-852 | Lever Unit |
| 35. | | Chassis Unit |
| 36. | CXB-851 | Lever Unit |
| 37. | CXB-861 | Lever Unit |
| 38. | | Arm |
| 39. | CBH-536 | Spring |
| 40. | CXB-862 | Bracket Unit |
| 41. | B10-609-A | CM2.6×4 |
| 42. | | Lever |
| 43. | CNV-952 | Arm |
| 44. | CNV-951 | Arm |
| 45. | CBH-553 | Spring |
| 46. | CBH-531 | Spring |
| 47. | CXB-853 | Lever Unit |
| 48. | | Lever |
| 49. | CNV-953 | Arm |
| 50. | | Guide |
| 51. | CXB-969 | Arm Unit |
| 52. | CLA-845 | Bush |
| 53. | B10-611-A | CM2.6 × 6 |
| 54. | CLA-844 | Bush |
| 55. | | Arm |
| 56. | CBH-535 | Spring |
| 57. | CXB-971 | Holder Unit |
| 58. | CBH-542 | Spring |
| 59. | CBH-561 | Spring |
| 60. | CXB-994 | Pinch Roller Unit |
| 61. | CNV-988 | Lever |
| 62. | CLA-846 | Bush |
| 63. | CBH-532 | Spring |
| 64. | CBH-537 | Spring |
| 65. | CXB-858 | Bracket Unit |
| 66. | CNP-697 | P.W.Board |
| 67. | CKS-052 | Plug |
| 68. | CSH-062 | Switch |
| 69. | CBA-076 | Screw, M2.6×6 |

## Exploded View (Bottom)(CX-118FV, 118FV/A)

| Key No. | Part No. | Description |
|---|---|---|
| 1. | CXM-065 | Motor |
| 2. | CNM-513 | Insulator |
| 3. | B10-811-A | BM2.6 × 6 |
| 4. | B06-609-B | Screw, M2.6 × 4 |
| 5. | CLA-825 | Shaft |
| 6. | CXP-028 | Solenoid |
| 7. | | Arm |
| 8. | CBH-527 | Spring |
| 9. | B20-101-B | EW2$\phi$ × 0.4t |
| 10. | | Chassis Unit |
| 11. | | Bracket |
| 12. | B10-900-A | BM2.6 × 3 |
| 13. | B90-097-A | BM2 × 2.5 |
| 14. | CXP-029 | Solenoid |
| 15. | B10-809-A | BM2.6 × 4 |
| 16. | | Bracket |
| 17. | B06-696-A | Screw, M2.6 × 3 |
| 18. | | Cam |
| 19. | CBF-111 | Washer |
| 20. | CNR-130 | Flywheel |
| 21. | CNT-072 | Belt |
| 22. | CXB-849 | Arm Unit |
| 23. | | P.W.Board |
| 24. | RD1/2PS681J | Resistor |
| 25. | CKS-054 | Plug |
| 26. | W03A or 1S1886 or SR1K2 | Diode |
| 27. | | Holder |
| 28. | CNV-984 | Screw |

## PARTS LIST

| Key No. | Part No. | Description |
|---|---|---|
| 29. | CLA-817 | Collar |
| 30. | CBF-046 | Washer |
| 31. | CNV-955 | Gear |
| 32. | CLA-914 | Pulley |
| 33. | CNV-956 | Gear |
| 34. | CNV-962 | Lever |
| 35. | CNV-959 | Arm |
| 36. | CBH-521 | Spring |
| 37. | CBH-548 | Spring |
| 38. | CNV-960 | Lever |
| 39. | CBH-520 | Spring |
| 40. | CNV-961 | Lever |
| 41. | CXB-829 | Sub Chassis Unit |
| 42. | B10-805-A | BM2 × 8 |
| 43. | | Cover |
| 44. | CSN-061 | Switch |
| 45. | | P.W.Board |
| 46. | B20-103-B | EW2.5ø × 0.4t |
| 47. | CNV-958 | Lever |
| 48. | CNV-957 | Arm |
| 49. | CXB-833 | Reel Unit |
| 50. | CXB-832 | Reel Unit |
| 51. | CXB-977 | Sub Chassis Assy |
| 52. | | Bracket |
| 53. | | Arm |
| 54. | | Arm |
| 55. | CBH-526 | Spring |
| 56. | CBH-525 | Spring |
| 57. | CBF-045 | Washer |

**PIONEER ELECTRONIC CORPORATION**
4-1, Meguro 1 chome, Meguro-ku, TOKYO, 153, JAPAN
**PIONEER ELECTRONICS OF AMERICA**
1925 E. Dominguez St. Long Beach, Calif. 90810
**PIONEER ELECTRONIC (EUROPE) N.V.**
Luithagen-Haven 9, 2030 Antwerp, Belgium
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.**
178-184 Boundary Road, Braeside, Victoria 3195, Australia





<CRT-199-0>
Printed in Japan